

# RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

ROC #9

231784



DATE: 1/31/2008  
SUBJECT: CLP Data Package for Quality Assurance Review  
FROM: Hazardous Waste Support Section (HWSS)/RSCC  
TO: HWSS ESAT-TOPO

TDF# 08-0222

Attached is the following ORGANIC Data Package to be reviewed for Quality Assurance

SITE: Cornell Dubilier

CASE #: 37088

SDG#: B4QR2, B4QP5

SAMPLER: W-RST

PROJ. CODE: RS SITE SPILL #: GZ

#SAMPLES

MATRIX

LAB: MITKEM OPERABLE UNIT: 00

35

Soil

TURN-AROUND-TIME: 21 day

CERCLIS ID #: NJD981557879

FRACTION:

PCBs

Contaminant(s) of Concern (If known)

## REGION II RSCC DATA TRANSFER LOG

Relinquished By

Received By

Signature

Date/Time

Signature

Date/Time

Robert [Signature] 2/5/08 10:26 am

C. Starns 2/5/08 10:26 am

C. Starns 2/7/08

Doreen Christine Allini 2/7/08

Doreen Christine Allini 2/13/08 11:30 am

Robert [Signature] 2/13/08 11:30 am

Robert [Signature] 2/13/08 11:35 am

R. Arman 2/13/08 11:35 am

R. Arman 2/13/08 2:10 pm

Robert [Signature] 2/13/08 2:10 pm

Robert [Signature] 2/13/08 3:45 am

R. Arman 2/13/08 3:45 am

R. Arman 2/14/08 10:45 am

Robert [Signature] 2/14/08 10:45 am

Robert [Signature] 2/14/08 1:10 pm

Michelle J. Peña 2/14/08 1:10 pm

Michelle J. Peña 2/14/08 1:40 pm

Robert [Signature] 2/14/08 1:40 pm

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 37088  
LABORATORY: Mitkem Lab  
SAMPLER: W-RST

SDG Nos.: B4QR2  
SITE: Cornell Dubilier  
ANALYSIS: PCB

DATA ASSESSMENT

The current SOP HW-37 (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material), "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's  
Signature: Dorina Christina Alliu

Date: February/8/2008

Peer Reviewer's  
Signature: P. Hume

Date: 2/13/2008

Verified By: R. Amore

Date: 2/14/2008

SDG# B4QR2

**1. HOLDING TIME:**

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No problems found for this qualification.

**2. SURROGATES**

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

The following diluted aroclor samples have surrogate percent recoveries less than 10%. Detected compounds are qualified J. Non-detected compounds are qualified R.

**Decachlorobiphenyl B4QS0DL**

Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

**3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:**

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

The following Aroclor matrix/matrix spike duplicate samples have percent recoveries that are greater than the upper acceptance limit. Detected compounds are qualified J. Non-detected compounds are not qualified.

**Aroclor-1260 B4QR2MS, B4QR2MSD, B4QR2**  
**Aroclor-1016 B4QR2MS, B4QR2MSD, B4QR2**

**4. Laboratory Control Samples (LCS):**

The LCSs data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

No problems found for this qualification.

**5. BLANK CONTAMINATION:**

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U.

The following analytes in the sample shown were qualified with "U" for these reasons:

**A) Method blank contamination:**

No problems found for this qualification.

**B) Field or rinse blank contamination:**

Not Applicable

**6. CALIBRATION:**

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

**A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):**

For the PCB fraction, if %RSD exceeds 20% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 15% for analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For closing CCV, if %D exceeds 50% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

The following samples are associated with an opening CCV for Aroclor-1254 which was missing. Detected compound are qualified J. Non-detected compound are qualified UJ.

B4R2DL, B4S6DL, B4S7DL, B4S8DL, B4S9DL, B4T0DL, ABLK2F

**7. COMPOUND IDENTIFICATION:**

**A) PCB Fraction:**

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

The following aroclor samples have percent differences between analyte results in the range of 26-70%. Detected compounds are qualified J.

**Qualified "J"**

**Aroclor-1254** B4QR2, B4QR2DL, B4QR2MSD, B4QR7DL, B4QS2, B4QS5, B4QS6, B4QS7, B4QS9

The following aroclor samples have percent differences between analyte results in the range of 71-100%. Detected compounds are qualified J. Non-detected compounds are not qualified

**Qualified "J"**

**Aroclor-1016** B4QR2MS

The following aroclor samples have percent differences between analyte results in the range of 101-200%. Detected and non-detected compounds are not qualified. Use professional judgment to qualify the detected compounds based on whether there are peak interferences on either column.

**Qualified "J"**

**Aroclor-1016** B4QR2MSD

**8. CONTRACT PROBLEMS NON-COMPLIANCE:**

An opening CCV for Aroclor-1254 was missing

**9. FIELD DOCUMENTATION:**

No problems.

**10. OTHER PROBLEMS:**

None

- 11. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.**  
B4QR2DL, B4QR7DL, B4QR8DL B4QS0DL, B4QS6DL, B4QS7DL, B4QS8DL, B4QS9DL, B4QT0DL.

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 37088  
LABORATORY: Mitkem Lab  
SAMPLER: W-RST

SDG Nos.: B4QP5  
SITE: Cornell Dubilier  
ANALYSIS: PCB

DATA ASSESSMENT

The current SOP HW-37 (Revision 1) August 2007, USEPA Region II Data Validation SOP for Statement of Work SOM01.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material), "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's  
Signature: Dorina Christina Alliu

Date: February/8/2008

Peer Reviewer's  
Signature: C. Stame

Date: 2 / 13 / 2008

Verified By: R. Amore

Date: 2 / 14 / 2008

SDG# B4QP5

**1. HOLDING TIME:**

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time. No problems found for this qualification.

**2. SURROGATES**

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

The following aroclor samples have surrogate percent recoveries less than 30% but greater than 10%. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

**Decachlorobiphenyl B4QP7, B4QP7MS**

Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

**3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:**

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

The relative percent difference (RPD) between the following aroclor matrix spike and matrix spike duplicate recoveries is outside criteria. Detected compounds are qualified J. Non-detected compounds are not qualified.

**Aroclor-1016 B4QP7MSD, B4QP7**

**Aroclor-1260 B4QP7MSD, B4QP7**

The following Aroclor matrix/matrix spike duplicate samples have percent recoveries that are greater than the upper acceptance limit. Detected compounds are qualified J. Non-detected compounds are not qualified.

**Aroclor-1016 B4QP7MSD, B4QP7**

Aroclor-1260 B4QP7MS, B4QP7MSD, B4QP7

**4. Laboratory Control Samples (LCS):**

The LCSs data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

No problems found for this qualification.

**5. BLANK CONTAMINATION:**

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U.

The following analytes in the sample shown were qualified with "U" for these reasons:

A) **Method blank contamination:**  
No problems found for this qualification.

B) **Field or rinse blank contamination:**  
Not Applicable

**6. CALIBRATION:**

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) **Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):**

For the PCB fraction, if %RSD exceeds 20% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 15% for analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For closing CCV, if %D exceeds 50% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

No problems found for this qualification.



7. COMPOUND IDENTIFICATION:

A) PCB Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

The following aroclor samples have percent differences between analyte results in the range of 26-70%. Detected compounds are qualified J.

**Qualified "J"**

**Aroclor-1254** B4QP7DL, B4QP7MS, B4QR6

**Aroclor-1016** B4QP7MS, B4QP7MSD

The following aroclor samples have percent differences between analyte results in the range of 71-100%. Detected compounds are qualified JN. Non-detected compounds are not qualified. Use professional judgment to qualify the detected compounds based on whether there are peak interferences on either column.

**Qualified "J"**

**Aroclor-1254** B4QR0

The following aroclor samples have percent differences between analyte results exceeding 50% and the results are below CRQL. Detected compounds are qualified U. Non-detected compounds are not qualified. Reported sample concentrations have been elevated to the CRQL.

**Qualified "U"**

**Aroclor-1254** B4QQ8

The following aroclor samples have percent differences between analyte results in the range of 101-200%. Detected and non-detected compounds are not qualified. Use professional judgment to qualify the detected compounds based on whether there are peak interferences on either column.

**Qualified "J"**

**Aroclor-1254** B4QP7, B4QP9, B4QP7MSD.

8. CONTRACT PROBLEMS NON-COMPLIANCE:

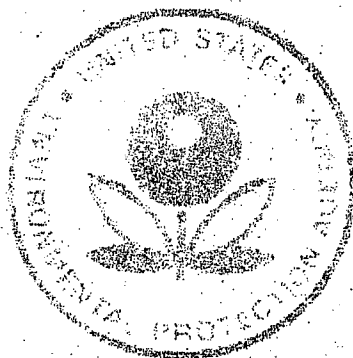
9. FIELD DOCUMENTATION: No problems.

10. OTHER PROBLEMS: None

11. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified NOT to be used.  
B4QR4DL, B4QR6DL, B4QP7DL

SOP HW-37  
Revision 1  
August 2007

SOP NO. HW-37/Aroclor  
Validation of Data  
USEPA Contract Laboratory Program  
Statement of Work for Organic Analysis of Low/Medium  
Concentration of Aroclor Organic Compounds SOM01.2



Prepared by: George Karras  
George Karras, Chemist  
Hazardous Waste Support Section

Date: 8/13/07

Peer Reviewed by: Russell Arnone  
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Date: 10/3/07

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Linda Mangel, Chief  
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Date: 10/9/07

Approved by: Robert Runyon  
Robert Runyon, Chief  
Hazardous Waste Support Branch

Date: 10/10/07

Reviewed by: Annual Review  
Name \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by: \_\_\_\_\_  
Name \_\_\_\_\_

Date: \_\_\_\_\_

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## INTRODUCTION

### Scope and Applicability

This SOP offers detailed guidance in evaluating laboratory data generated according to the method in the "USEPA Contract Laboratory Program Statement of Work for Organics Analysis Multi-Media, Multi-Concentration, SOM01.2, February 2007". The validation procedures and actions discussed in this document are based on the requirements set forth in the "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, July 2007". This document attempts to cover technical problems specific to low/Medium concentration of Aroclor compounds. Situations may arise where data limitations must be assessed based on the reviewer's own professional judgement.

In addition to technical requirements, contractual requirements may also be covered in this document. While it is important that instances of contract non-compliance be addressed in the Data Assessment, the technical criteria are always used to qualify the analytical data.

### Summary

To ensure a thorough evaluation of each result in a data case, the reviewer must complete the checklist within this SOP, answering specific questions while performing the prescribed "ACTIONS" in each section. Qualifiers (or flags) are applied to questionable or unusable results as instructed. The data qualifiers discussed in this document are as follows:

### Data Qualifiers

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- JN - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

#### **Lab Qualifiers:**

- D - The positive value is the result of an analysis at a secondary dilution factor.
- B - The analyte is present in the associated method blank as well as in the sample. This qualifier has a different meaning when validating inorganic data.
- E - The concentration of this analyte exceeds the calibration range of the instrument.
- P - Pesticide/Aroclor target analytes when the % Difference between the analyte concentrations obtained from the two dissimilar GC columns is greater than 25%.

The reviewer must prepare a detailed data assessment to be submitted along with the completed SOP checklist. The Data Assessment must list all data qualifications, reasons for qualifications, instances of missing data and contract non-compliance.

#### **Reviewer Qualifications:**

Data reviewers must possess a working knowledge of the USEPA Statement of Work SOM01.2 and National Functional Guidelines mentioned above.

STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II

Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007

SOP HW-37/Aroclor, Revision 1

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 37088 LAB: Mitkem

SITE NAME: Cornell Dubilier SDG No(s): B4QR2

1.0 Chain of Custody and Sampling Trip Reports

- 1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples?

☒ \_ \_

ACTION: If no, contact RSCC, or the TOPO to obtain replacement of missing or illegible copies from the lab.

- 1.2 Is the Sampling Trip Report present for all samples?

☒ \_ \_

ACTION: If no, contact either RSCC or ask the TOPO to obtain the necessary information from the prime contractor.

2.0 Data Completeness and Deliverables

- 2.1 Have any missing deliverables been received and added to the data package?

☒ \_ \_

ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the data package in the Contract Problems/Non-compliance section of the Data Assessment.

- 2.2 Was SMO/CLASS CCS checklist included with the package?

☒ \_ \_

## STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II  
Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007  
SOP HW-37/Aroclor, Revision 1

YES NO N/A

- 2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, and Sampling Trip Report?

ACTION: If yes, contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory.

### 3.0 Cover Letter SDG Narrative

- 3.1 Is the SDG Narrative or Cover Letter Present?

- 3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.5.1)?  
EPA sample numbers in the SDG, detailed documentation of any quality control, sample, shipment, and/or analytical problems encountered in processing the samples? Corrective action taken?

- 3.3 Does the Narrative contain the following information SOM01.1, page B-12, section 2.5.1)?  
column used, storage of samples, case#, SDG#, analytical problems, and discrepancies between field and lab weights.

- 3.5 Did the contractor record the temperature of the cooler on the Form DC-1, Item 9 - Cooler Temperature, and in the SDG Narrative?

- 3.6 Does the Case Narrative contain the "verbatim" statement (page B-12, section 2.5.1 of the SOM)?

ACTION: If "No", to any question in this section, contact the TOPO to obtain necessary resubmittals. If unavailable, document under the Contract Problems/Non-Compliance section of the Data Assessment.

STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II  
Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007  
SOP HW-37/Aroclor, Revision 1

YES NO N/A

4.0 Data Validation Checklist

4.1 Check the package for the following (see SOM reporting requirements, section 2.1, page B-10):

a. Is the package paginated in ascending order starting from the SDG narrative?

☒      

b. Are all forms and copies legible?

☒      

c. Assembled in the order set forth in the SOW?

☒      

d. All Aroclor Data present?

☒      

PART A: Low/Medium Aroclor Analyses

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records, Sampling Trip Report or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?

   ☒   

ACTION: If samples were not iced or the ice was melted upon arrival at the laboratory and the temperature of the cooler was  $> 10^{\circ}\text{C}$ , then flag all positive results with a "J" and all non-detects "UJ".

2.0 Holding Times

2.1 Have any Aroclor technical holding times, determined from date of collection to date of analysis, been exceeded?

   ☒   

2.2 Preservation: Aqueous and Non-aqueous samples must be cooled at  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .



## STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II  
Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007  
SOP HW-37/Aroclor, Revision 1

YES NO N/A

ACTION: Qualify sample results according to the following table.


Holding Time Actions for Low/Medium Aroclor Analyses

Matrix	Preserved	Criteria	Action	
			Detected Associated Compounds	Non-Detected Associated Compounds
Aqueous	No	≤ 7 days (extraction) < 40 days (analysis)	J*	UJ*
	No	> 7 days (extraction) > 40 days (analysis)	J	UJ
	Yes	≤ 7 days (extraction) ≤ 40 days (analysis)	No qualification	
	Yes	> 7 days (extraction) > 40 days (analysis)	J	UJ
	Yes/No	> 28 Days (extraction)	J	R
Non-aqueous	No	≤ 14 days (extraction) ≤ 40 days (analysis)	J*	UJ*
	No	> 14 days (extraction) > 40 days (analysis)	J	UJ
	Yes	≤ 14 days (extraction) ≤ 40 days (analysis)	No qualification	
	Yes	> 14 days (extraction) > 40 days (analysis)	J	UJ
	Yes/No	> 28 Days (extraction)	J	R

\* Only if cooler temperature exceeds 10°C (see ACTION in Section 1.1 above).  
No action required if temperature ≤ 10°C.

3.0 Surrogate Recovery (Form II ARO-1, Form II ARO-2, Form VIII ARO)

3.1 Are the Aroclor Recovery Summary Forms present?

 — —

ACTION: Contact the TOPO to obtain an explanation/resubmittal from the lab. If missing deliverables are unavailable, document the effect in the Data Assessment.

## STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II  
Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007  
SOP HW-37/Aroclor, Revision 1

YES NO N/A

- 3.2 Were the two surrogates, tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) added to all samples, MS/MSD, LCS, blanks including standards?

☒ ☐ ☐

ACTION: If no, use professional judgment in qualifying data as missing surrogate analyte may not directly apply to target analytes.

- 3.3 Were outliers marked with an asterisk on Form II?

☐ ☒ ☐

ACTION: Circle all outliers with a red pencil.

If yes, were effected samples re-analyzed?

☐ ☐ ☒

- 3.4 The RTs of the surrogates in each mid-point Aroclor standards used for continuing calibration verification, all samples, including MS/MSD, LCS and all blanks must be within the calculated RT window. TCX must be within  $\pm 0.05$  minutes and DCB must be within  $\pm 0.10$  minutes of the mean retention time (RT) determined from the initial calibration and tabulated in Form VIII Pest.

Were any outliers marked with an asterisk on Form VIII ARO?

☐ ☒ ☐

ACTION: Circle all outliers with a red pencil. If any Surrogate is outside the required limits, qualify their associated target compounds (See Table below) as follows:

Surrogate Compound Recovery Action for Aroclors

Criteria	Action	
	Detected Target Compounds	Non-Detected Target Compounds
%R > 200%	J	No qualification
150% < %R ≤ 200%	J	No qualification
30% ≤ %R ≤ 150%	No qualification	
10% ≤ %R < 30%	J	UJ
%R < 10% (sample dilution not a factor)	J	R
%R < 10% (sample dilution is a factor)	J	Use Professional Judgement
RT out of RT window	Use professional judgment	
RT within RT window	No qualification	

## STANDARD OPERATING PROCEDURE . . . . .

USEPA Region II

Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007

SOP HW-37/Aroclor, Revision 1

YES NO N/A

Note: Blank analysis having surrogates out of specification:

The reviewer must give special consideration to the validity of associated samples. Basic concern is whether the blank problems represent an isolated problem with the blank alone or whether there is a fundamental problem with the analytical process. For example, if one or more samples in the batch show acceptable surrogate recoveries, the reviewer may choose to consider the blank problem to be an isolated occurrence.

ACTION: Note in the Data Assessment under Contract Problems/Non-Compliance if the Lab did not perform reanalysis and reviewer's judgment regarding blank problem.

3.5 Are there any transcription/calculation errors between raw data and Form IIs?          ✓

ACTION: If large errors exist, ask the TOPO to obtain an explanation/resubmittal from the lab, make any necessary corrections and note errors in the data assessment.

#### 4.0 Matrix Spike/Matrix Spike Duplicate Recovery (Form III)

Note: Data for MS/MSD will not be present unless requested.

4.1 Are the MS/MSD Recovery Forms (Form III ARO) present?          ✓

4.2 Was the MS/MSD analyzed at the required frequency (once per SDG, or every 20 samples, whichever is more frequent)?          ✓

ACTION: If any MS/MSD data are missing, take action as specified in section 3.1 above.

ACTION: No action is taken on MS/MSD data alone. However, using professional judgement, the validator may use the MS and MSD results in conjunction with other QC criteria and determine the need for some qualification of the data. If Any MS/MSD % recovery or RPD is out of specification, qualify data to include the consideration of the existence of interference in the raw data. Consideration include, but not limited to the following "Action":

#### Matrix Spike/Matrix Spike Duplicate Action for Aroclor

Criteria	Action	
	Detected Spike Compounds	Non-detected Spike Compounds
%R or RPD > Upper Acceptance Limit	J	No qualification
20% ≤ %R < Lower Acceptance Limit	J	UJ

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YES NO N/A

%R < 20%	J	Use professional judgement
Lower Acceptance Limit $\leq$ %R; RPD $\leq$ Upper Acceptance Limit	No qualification	

Note: If it can be determined that the results of the MS/MSD affects only the sample spiked, limit qualification to only this sample. However, use professional judgment when it is determined through the MS/MSD results that the laboratory is having systematic problem in the analysis of one or more analytes that affect all associated samples.

5.0 Blanks (Form IV)

5.1 Is the Aroclor Method Blank Summary (Form IV ARO) present for aqueous and soil samples?

☒ ☐ ☐

5.2 Frequency of Analysis: For the analysis of AROCLOR, has a method blank been analyzed for each SDG or every 20 samples, whichever is more frequent?

☒ ☐ ☐

ACTION: If any blank data are missing, take action as specified above in section 3.1. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?

☐ ☐ ☒

ACTION: If Form IV sulfur clean-up blank is missing, take action as specified in section 3.1 above.

5.4 Has a Aroclor instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?

☒ ☐ ☐

ACTION: If any blank data are missing, take action specified in Section 3.1.

5.5 Was the correct identification scheme used for all Aroclor blanks? (See page B-39, section 3.3.7.3 of SOM01.1 for further information)

☒ ☐ ☐

ACTION: Contact the TOPO to obtain resubmittals or make the required corrections on the forms.

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YES NO N/A

Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.

- 5.6 Chromatography: Review the blank raw data chromatogram, quant. Reports and data system printout. Is the chromatographic performance (baseline stability) acceptable for each instrument?

☒ ☐ ☐

ACTION: Use professional judgement to determine the effect on the data.

- 5.7 Are all detected hits for target compounds in method, and field blanks less than the CRQL?

☐ ☐ ☒

ACTION: IF no, an explanation and laboratory's corrective actions must be addressed in the case SDG narrative. Contact TOPO to request from Lab. revised narrative and make a note in the Contract Problems/Non-Compliance section of the Data Assessment.

#### 6.0 Contamination

NOTE: "Water blanks", "drill blanks", and distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

- 6.1 Do any method/reagent or cleanup blanks contain positive hits for target Aroclor compounds with values greater than the CRQL for that analyte?

☐ ☒ ☐

Note: The concentration of each target compound in the instrument blank must be less than the CRQL for that analyte.

ACTION: Make note in data assessment under Contract Problems/Non-Compliance if any blank contains hit above the CRQLs.

- 6.2 Do any instrument blanks contain positive Aroclor results with values greater than CRQLs?

☐ ☒ ☐

ACTION: Take the action specified in section 6.1.

- 6.3 Do any field/rinse blanks have positive Aroclor results?

☐ ☐ ☒

NOTE: All field blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration QC problems.

ACTION: Follow the directions in the table below to qualify results due to contamination. Use the largest value from all the associated

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YES NO N/A

blanks. If any blanks are grossly contaminated, all associated sample data should be qualified unusable (R).

Blank Action for Aroclor Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field, Sulfur Cleanup, Instrument	Detects	Not detected	No qualification required
	< CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL	No qualification required
	= CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL	No qualification required
	> CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and < blank contamination	Report concentration of sample with a U
		≥ CRQL and > blank contamination	No qualification required
	Gross contamination	Detects	Qualify results as unusable R

NOTE: Analytes qualified "U" for blank contamination are treated as "hits" when qualifying for calibration criteria.

Note: When applied as described in the table above, the contaminant concentration in the blank are multiplied by the sample dilution factor.

6.4 Are there field/rinse/equipment blanks associated with every sample? ☐ ☒

ACTION: Note in data assessment if there's no associated field/rinse/equipment blank.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Aroclor Initial and Continuing Calibration

7.1 Are the following Forms, chromatograms and data system printouts present?

a.) Form VI ARO-1/Aroclor Initial Calibration (Multipoint) ☒ ☐

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YES NO N/A

- b.) Form VI ARO-2/Aroclor Initial Calibration (Multipoint) ☒ ☐ ☐
- c.) Form VI ARO-3/Aroclor Initial Calibration (Singlepoint) ☒ ☐ ☐
- d.) Form VII ARO/Aroclor Calibration Verification ☒ ☐ ☐
- e.) Form VIII ARO/Aroclor Analytical Sequence ☒ ☐ ☐
- f.) Form X ARO/Identification Summary for Multicomponent Analysis ☒ ☐ ☐

7.2 Initial Calibration

7.2.1 Was the following contract required initial calibration sequence provided by the laboratory? ☒ ☐ ☐

Initial Calibration Sequence	
1.	Aroclor 1221 CS3 (400ng/ml)
2.	Aroclor 1232 CS3 (400 ng/ml)
3.	Aroclor 1242 CS3 (400 ng/ml)
4.	Aroclor 1248 CS3 (400 ng/ml)
5.	Aroclor 1254 CS3 (400 ng/ml)
6.	Aroclor 1262 CS3 (400 ng/ml)
7.	Aroclor 1268 CS3 (400 ng/ml)
8.	Aroclor1016/1260 (100 ng/ml) CS1
9.	Aroclor1016/1260 (200 ng/ml) CS1
10.	Aroclor1016/1260 (400 ng/ml) CS1
11.	Aroclor1016/1260 (800 ng/ml) CS1
12.	Aroclor1016/1260 (1600 ng/ml) CS1
13.	Instrument Blank

ACTION: If initial calibration is not performed or not performed in the proper sequence, notify the TOPO and make a note in the data assessment.

7.3 Are there any transcription/calculation errors between raw data and the Forms? ☐ ☐ ☒

ACTION: If large errors exist, take action specified in section 3.1 above.

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YES NO N/A

7.4 Mean Retention Time (RT) and RT Window

Were the following mean RT and RT window met:

☒ ☐ ☐

a.) The mean RT of each of the three to five major peaks were determined from the five-point initial calibration for all Aroclors

b.) RT window was calculated as  $\pm 0.07$  for each of the three to five major peaks and  $\pm 0.05$  and  $\pm 0.10$  for the surrogates tetrachloro-m-xylene and decachlorobiphenyl, respectively.

ACTION: If no, follow the action as specified in section 3.1.

7.5 Was at least one chromatogram from each of the Aroclor standards yield peaks that give deflection between 50-100% of full scale?

☒ ☐ ☐

ACTION: IF no, take action as specified in section 3.1.

7.6 Was the mean Calibration Factor (CF) calculated for the three to five major peaks of each Aroclor, as well as for the surrogates, over the initial calibration range?

☒ ☐ ☐

7.7 Were the Percent Relative Standard Deviation (%RSD) of the Calibration Factor for the three to five major peaks < 20% of each of the Aroclor compounds and surrogates?

☒ ☐ ☐

ACTION: If no, take action as specified in the following Table.

Initial Calibration Action for Aroclor Analyses

Criteria	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
Initial calibration is not performed or not performed in proper sequence	Use Professional Judgment and notify Contract Lab Program (CLP) Project Officer	
%RSD exceeds allowable limits *	J	UJ
%RSD within allowable limits *	No qualification	

\* %RSD < 20.0% for Aroclors and surrogates (tetrachloro-m-xylene and decachlorobiphenyl).

7.8 Continuing Calibration Verification (CCV) (Form VII)

Were the Absolute Retention Time (RT) for each Aroclor and surrogate in the mid-point concentration (CS3) of



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YES NO N/A

the Standard used for CCV must be within the RT window determined from the initial calibration?

- 7.9 For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, the Percent Difference (%D) between the CF of each of the three to five peaks used to identify an Aroclor and surrogates in the mid-point concentration (CS3) of the Aroclor standards and the CF from the initial calibration must be within  $\pm 15.0\%$ .
- 7.10 For a closing CCV, the %D between the CF of each of the three to five peaks used to identify an Aroclor and surrogates in the mid-point concentration (CS3) of the Aroclor standards and the CF from the initial calibration must be within  $\pm 50.0\%$ .
- 7.11 No more than 14 hours may elapse from the injection of the instrument Blank that begins an analytical sequence (opening CCV) and the injection of the last mid-point concentration (CS3) of the Aroclor standards that ends an analytical sequence (closing CCV).
- 7.12 No more than 12 hours may elapse from the injection of the instrument blank that begins an analytical sequence (opening CCV and the injection of the last sample or blank that is part of the same analytical sequence.

Were sections 7.8 to 7.12 met?

ACTION: If no, use the following table to qualify Aroclor data:

Continuing Calibration Verification (CCV) Action for Aroclor Analyses

Criteria	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
RT out of RT Window	Use professional Judgment *	
Percent Difference not within limits $\pm 15\%$ as specified in section 7.9 above	J	UJ
Percent Difference not within limits $\pm 50\%$ as specified in section 7.10 above	J	UJ
Time elapsed is greater than acceptable limits as specified in section 7.11 & 7.12 above	R	
Percent Difference, time elapsed and RT are within acceptable limits	No qualification	

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YES NO N/A

\* For non-detected target compounds in the affected samples, check to see if the sample chromatogram contain any peak that are close to the expected RT window of the Aroclor of interest.

If no peaks are present, consider the non-detected values to be valid and no qualification of the data is necessary.

If any peaks are present close to the expected RT window of the Aroclor of interest, qualify the non-detected values as presumptively present "N".

For detected compounds in the affected samples, if the peaks are within the RT window, no qualification of the data is necessary. If the peaks are close to the expected RT window of the Aroclors of interest, the reviewer may take additional effort to determine if sample peaks represent the compound of interest.

For example, the reviewer can examine the data package for the presence of three or more standards containing the Aroclor of interest that were run within the analytical sequence during which the sample was analyzed. If three or more such standards are present, the RT window can be re-evaluated using the mean RT of the standards.

If the peaks in the affected sample fall within the revised window, qualify the detected Aroclor as "JN".

If the reviewer cannot do anything with the data to resolve the problem of concern, qualify all non-detects as unuseable "R".

#### 8.0 Analytical Sequence Check (Form VIII-ARO)

8.1 Is Form VIII-Pest present and complete for each column and each period of analyses?

ACTION: If no, take action as specified in section 3.1

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/ECD instrument used?

ACTION: If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

8.3 Are the surrogate retention time (RT) from the initial calibration for TCX and DCB provided on Form VIII-Pest?

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YES NO N/A

ACTION: If no, take action as specified in section 3.1

- 8.4 Was the asterisk (\*) applied to the RT of any blanks, samples, standards, MS/MSD, and LCS that did not meet the QC Limits of  $\pm 0.05$  minutes for TCX (tetrachloro-m-xylene) and  $\pm 0.10$  minutes for DCB (decachlorobiphenyl)?

11           

ACTION: If any data are missing, take action specified in 3.1 above.

If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Document in the data assessment under Contract Problems/Non-Compliance.

9.0 Sulfuric Acid and Gel Permeation Chromatography (GPC) Cleanup Procedures

- 9.1 Was sulfuric acid added to all extracts?

11           

Note: Sulfuric acid cleanup is mandatory for all extracts

ACTION: If no, take action specified in section 3.1

9.2 Gel Permeation Chromatography (GPC)

GPC is an optional cleanup procedure for both aqueous and non-aqueous samples that contain high molecular weight compounds that interfere with Aroclor analysis.

- 9.3 If GPC cleanup was performed on samples, GPC calibration is acceptable if the two UV traces meet the following requirements.

- Peaks must be observed and should be symmetrical for all compounds in the calibration solution.
- Corn oil and phthalate peaks should exhibit greater than 85% resolution.
- The phthalate and Methoxychlor peaks should exhibit greater than 85% resolution.
- Methoxychlor and perylene peaks should exhibit greater than 85% resolution.
- Perylene and sulfur peaks must be saturated and should exhibit greater than 90% baseline resolution.

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YES NO N/A

- f. The RT shift is less than 5% between UV traces for bis(2-ethylhexylphthalate and perylene.

9.4 Were all above criteria met?

11           

ACTION: If no, examine the raw data for the presence of high molecular weight contaminants. Examine the subsequent sample data for unusual peaks and use professional judgment in qualifying the data.


#### 10.0 Laboratory Control Samples (LCSs)

- 10.1 LCSs provide information on the accuracy of the analytical method and laboratory performance.

#### Aroclor Laboratory Control Sample Recovery - Aqueous and Non-Aqueous

Compound	% Recovery QC Limits
Aroclor 1016	50 - 150
Aroclor 1260	50 - 150
Tetrachloro-m-xylene (surrogate)	30 - 150
Decachlorobiphenyl (surrogate)	30 - 150

10.2 Were the above recoveries met?

11           

ACTION: If no, qualify the sample data as follows:

Criteria	ACTION	
	Detected Associated Compound	Non-Detected Associated Compound
%R> Upper Acceptance Limit	J	No qualification
%R< Lower Acceptance Limit	J	R
Lower Acceptance Limit < %R < Upper Acceptance Limit	No qualification	

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YES NO N/A

11.0 Aroclor Identification (Form X ARO/Identification Summary for Multicomponent Analysis)

- 11.1 Is Form X (ARO) complete for every sample in which Aroclor was detected?

☒ YES ☐ NO ☐ N/A

ACTION: Take action as specified in section 3.1 above.

- 11.2 The identification of a Multi component Aroclor by GC method is based primarily on RT data and pattern recognition. Were the following requirements met:

☒ YES ☐ NO ☐ N/A

- a.) A Minimum of 3 major peaks were selected for each Aroclor. If more than one Aroclor is observed in a sample, a peak common to other Aroclor(s) must not be used to quantitate other Aroclor. Lab must choose different peaks to quantitate each Aroclor.
- b.) If a chromatogram is replotted electronically to meet these requirements, the scaling factor used must be displayed on the chromatogram, and both the initial chromatogram and the replotted chromatogram must be submitted in the data package.
- c.) The Retention Time (RT) of both of the surrogates and reported target compounds must be within the calculated RT window of both columns.
- d.) When no analytes are identified in the sample, the chromatograms of the sample extract must use the same scaling factor used for the low-point standard of the initial calibration associated with those samples.
- e.) Chromatogram must display the largest peak of any Aroclor detected in the sample at less than full scale.
- f.) If an extract must be diluted, chromatograms must display Aroclor peaks between 25-100% of full scale.

ACTION: If retention times (RT) or peak apex cannot be verified, contact TOPO to obtain rescaled chromatograms from the lab.

If data reviewer identifies a peak in both GC columns that fall within the appropriate RT windows, but was reported as

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YES NO N/A

non-detect, the compound may be false negative. If necessary, contact TOPO to instruct laboratory to re-evaluate the chromatograms.

- 11.3 Are there any transcription/calculation errors in Form I and Form X ARO? ☐ ☐ ☒

ACTION: Take action as specified in section 3.1 above.

- 11.4 Are the RTs of Aroclor peaks within the established RT window for analyses on both columns? ☒ ☐ ☐

- 11.5 Was the GC/MS confirmation provided for Aroclor concentration > 10 ug/ml in final extract? ☐ ☐ ☒

NOTE: Laboratory is required to contact SMO to determine if GC/MS confirmation is required. Check the semivolatile TIC data for presence of Aroclors.

- 11.6 Is the per cent difference (%D) calculated for positive results on both columns < 25%? ☐ ☒ ☐

Action: Reviewer must check columns for peak interferences for the positive hits. Qualify the Arclor (s) according to the following Table:

Action on Qualifying Positive Aroclor Results

Percent Differences	Qualifier
0 - 25%	None
26 - 70%	"J"
71 - 100%	"JN"
101 - 200% (No Peak Interferences)	"R"
101 - 200% (Interferences detected)*	"JN"

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> 50% (Aroclor value < CRQL)**	"U"
> 200%	"R"

\* When interferences is detected on either column, qualify the data as "JN"

\*\* When the Aroclor value is below CRQL and %D > 50%, raise the value to CRQL and qualify "U", undetected.

**12.0 Target Aroclor List (TCL)**

12.1 Are the Aroclor Analysis Data Sheets (Form I ARO) present with required header information on each page for samples, MS/MSD (if required), method and instrument blanks (per column & analysis)?

☒ ☐ ☐

12.2 Is the chromatographic performance acceptable with respect to baseline stability, full-scale attenuation, peak shape/resolution?

☒ ☐ ☐

ACTION: If no, take action specified in section 3.1 above.

**13.0 Compound Quantitation and Reported Detection Limits**

13.1 Are there any transcription/calculation errors in the Form I results? Check at least two positive results. Were any errors found?

☐ ☐ ☒

ACTION: If errors were found, take action as specified in section 3.1 above.

13.2 Are the contract required quantitation limits (CRQL) adjusted to reflect sample dilution?

☒ ☐ ☐

ACTION: If errors exist, take action as specified in section 3.1 above.

ACTION: When a sample is required to be diluted, the lowest CRQL is used (unless a QC exceedance dictates the use of the higher CRQL from the diluted sample). Replace concentration which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I to use.

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YES NO N/A

Use a red pencil and draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

At the top or bottom of the Forms, write with red pencil, "DO Not Use".

Note: If the sample dilution factor (DF) is greater than 10, an additional 10 times more concentrated than the diluted sample extract must be analyzed and reported with the sample data. If the DF is less or equal to 10, but greater than 1, the results of the original undiluted analysis must also be reported (see SOM01.1/section 10.3.3.4/page D-44/ARO).

ACTION: IF the above requirement was not met, contact the TOPO to obtain an explanation/resubmittal from the lab and make a note in the Data Assessment under Contract Problems/Non-Compliance section.

13.3 For non-aqueous samples, were the percent moisture < 70%? ☒ 11          

Action: If the % moisture  $\geq 70.0\%$  and  $< 90.0\%$ , qualify detects as "J" and non-detects as approximated "UJ" If the % Moisture  $\geq 90\%$ , qualify detects as "J" and non-detects as "R"

## 14.0 Field Duplicates

14.1 Were any field duplicates submitted for Aroclor analysis? ☒ 11          

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. If large differences exist, contact the TOPO to confirm identification of field duplicates with the sampler.



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## Definitions

ARO - Aroclor  
CCS - contract compliance screening  
CF - Calibration Factor  
CLASS - Contract Laboratory Analytical Services Support  
CLP - Contract Laboratory Program  
CRQL - Contract Required Quantitation Limit  
GC/ECD - Gas Chromatography/Electron Capture Detector  
kg - kilogram  
µg - microgram  
l - liter  
ml - milliliter  
QC - quality control  
RAS - Routine Analytical Services  
RPD - Relative Percent Difference  
RRF - Relative Response Factor  
RRF - Average Relative Response Factor (from initial calibration)  
RRT - Relative Retention Time  
RSD - Relative Standard Deviation  
RT - Retention Time  
RSCC - Regional Sample Control Center  
SDG - Sample Delivery Group  
SOP - standard operating procedure  
SOW - Statement of Work  
TCL - Target Compound List  
TCLP - Toxicity Characteristics Leachate Procedure  
TIC - Tentatively Identified Compound  
TPO - Technical Project Officer  
VTSR - Validated Time of Sample Receipt  
TOPO - Task Order Project Officer

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YES NO N/A

**References**

1. USEPA Contract Laboratory Program of Work for Organic Analysis Multi-Media, Multi-Concentration, SOW/CLP/SOM01.2, February 2007.
2. National Functional Guidelines for Superfund Organic Methods Data Review July 2007.

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Validation of Data  
USEPA Contract Laboratory Program  
Statement of Work for Organic Analysis of Low/Medium  
Concentration of Aroclor Organic Compounds SOM01.2



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## INTRODUCTION

### Scope and Applicability

This SOP offers detailed guidance in evaluating laboratory data generated according to the method in the "USEPA Contract Laboratory Program Statement of Work for Organics Analysis Multi-Media, Multi-Concentration, SOM01.2, February 2007". The validation procedures and actions discussed in this document are based on the requirements set forth in the "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, July 2007". This document attempts to cover technical problems specific to low/Medium concentration of Aroclor compounds. Situations may arise where data limitations must be assessed based on the reviewer's own professional judgement.

In addition to technical requirements, contractual requirements may also be covered in this document. While it is important that instances of contract non-compliance be addressed in the Data Assessment, the technical criteria are always used to qualify the analytical data.

### Summary

To ensure a thorough evaluation of each result in a data case, the reviewer must complete the checklist within this SOP, answering specific questions while performing the prescribed "ACTIONS" in each section. Qualifiers (or flags) are applied to questionable or unusable results as instructed. The data qualifiers discussed in this document are as follows:

### Data Qualifiers

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- JN - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

#### **Lab Qualifiers:**

- D - The positive value is the result of an analysis at a secondary dilution factor.
- B - The analyte is present in the associated method blank as well as in the sample. This qualifier has a different meaning when validating inorganic data.
- E - The concentration of this analyte exceeds the calibration range of the instrument.
- P - Pesticide/Aroclor target analytes when the % Difference between the analyte concentrations obtained from the two dissimilar GC columns is greater than 25%.

The reviewer must prepare a detailed data assessment to be submitted along with the completed SOP checklist. The Data Assessment must list all data qualifications, reasons for qualifications, instances of missing data and contract non-compliance.

#### **Reviewer Qualifications:**

Data reviewers must possess a working knowledge of the USEPA Statement of Work SOM01.2 and National Functional Guidelines mentioned above.

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USEPA Region II  
Method: CLP/SOW, SOM01.2/Aroclor

Date: August 2007  
SOP HW-37/Aroclor, Revision 1

YES NO N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 37088 LAB: Mitkem Lab

SITE NAME: Cornell Dubilier SDG No(s): B4Q2P5

1.0 Chain of Custody and Sampling Trip Reports

- 1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples?

☒ \_ \_

ACTION: If no, contact RSCC, or the TOPO to obtain replacement of missing or illegible copies from the lab.

- 1.2 Is the Sampling Trip Report present for all samples?

☒ \_ \_

ACTION: If no, contact either RSCC or ask the TOPO to obtain the necessary information from the prime contractor.

2.0 Data Completeness and Deliverables

- 2.1 Have any missing deliverables been received and added to the data package?

☒ \_ \_

ACTION: Contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the data package in the Contract Problems/Non-compliance section of the Data Assessment.

- 2.2 Was SMO/CLASS CCS checklist included with the package?

☒ \_ \_



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YES NO N/A

- 2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, and Sampling Trip Report?   N

ACTION: If yes, contact the TOPO to obtain an explanation or resubmittal of any missing deliverables from the laboratory.

**3.0 Cover Letter SDG Narrative**

- 3.1 Is the SDG Narrative or Cover Letter Present?   N

- 3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.5.1)?  
EPA sample numbers in the SDG, detailed documentation of any quality control, sample, shipment, and/or analytical problems encountered in processing the samples? Corrective action taken?   N

- 3.3 Does the Narrative contain the following information SOM01.1, page B-12, section 2.5.1)?  
column used, storage of samples, case#, SDG#, analytical problems, and discrepancies between field and lab weights.   N

- 3.5 Did the contractor record the temperature of the cooler on the Form DC-1, Item 9 - Cooler Temperature, and in the SDG Narrative?   N

- 3.6 Does the Case Narrative contain the "verbatim" statement (page B-12, section 2.5.1 of the SOM)?   N

ACTION: If "No", to any question in this section, contact the TOPO to obtain necessary resubmittals. If unavailable, document under the Contract Problems/Non-Compliance section of the Data Assessment.

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YES NO N/A

4.0 Data Validation Checklist

4.1 Check the package for the following (see SOM reporting requirements, section 2.1, page B-10):

a. Is the package paginated in ascending order starting from the SDG narrative?

☒ ☐ ☐

b. Are all forms and copies legible?

☒ ☐ ☐

c. Assembled in the order set forth in the SOW?

☒ ☐ ☐

d. All Aroclor Data present?

☒ ☐ ☐

PART A: Low/Medium Aroclor Analyses

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records, Sampling Trip Report or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?

☐ ☒ ☐

ACTION: If samples were not iced or the ice was melted upon arrival at the laboratory and the temperature of the cooler was  $> 10^{\circ}\text{C}$ , then flag all positive results with a "J" and all non-detects "UJ".

2.0 Holding Times

2.1 Have any Aroclor technical holding times, determined from date of collection to date of analysis, been exceeded?

☐ ☒ ☐

2.2 Preservation: Aqueous and Non-aqueous samples must be cooled at  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

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YES NO N/A

ACTION: Qualify sample results according to the following table.

Holding Time Actions for Low/Medium Aroclor Analyses

Matrix	Preserved	Criteria	Action	
			Detected Associated Compounds	Non-Detected Associated Compounds
Aqueous	No	≤ 7 days (extraction) < 40 days (analysis)	J*	UJ*
	No	> 7 days (extraction) > 40 days (analysis)	J	UJ
	Yes	≤ 7 days (extraction) ≤ 40 days (analysis)	No qualification	
	Yes	> 7 days (extraction) > 40 days (analysis)	J	UJ
	Yes/No	> 28 Days (extraction)	J	R
Non-aqueous	No	≤ 14 days (extraction) ≤ 40 days (analysis)	J*	UJ*
	No	> 14 days (extraction) > 40 days (analysis)	J	UJ
	Yes	≤ 14 days (extraction) ≤ 40 days (analysis)	No qualification	
	Yes	> 14 days (extraction) > 40 days (analysis)	J	UJ
	Yes/No	> 28 Days (extraction)	J	R

\* Only if cooler temperature exceeds 10°C (see ACTION in Section 1.1 above).  
No action required if temperature ≤ 10°C.

3.0 Surrogate Recovery (Form II ARO-1, Form II ARO-2, Form VIII ARO)

3.1 Are the Aroclor Recovery Summary Forms present?

ACTION: Contact the TOPO to obtain an explanation/resubmittal from the lab. If missing deliverables are unavailable, document the effect in the Data Assessment.

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YES NO N/A

- 3.2 Were the two surrogates, tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) added to all samples, MS/MSD, LCS, blanks including standards?

☒ ☐ ☐

ACTION: If no, use professional judgment in qualifying data as missing surrogate analyte may not directly apply to target analytes.

- 3.3 Were outliers marked with an asterisk on Form II?

☒ ☐ ☐

ACTION: Circle all outliers with a red pencil.

If yes, were effected samples re-analyzed?

☒ ☐ ☐

- 3.4 The RTs of the surrogates in each mid-point Aroclor standards used for continuing calibration verification, all samples, including MS/MSD, LCS and all blanks must be within the calculated RT window. TCX must be within  $\pm 0.05$  minutes and DCB must be within  $\pm 0.10$  minutes of the mean retention time (RT) determined from the initial calibration and tabulated in Form VIII Pest.

Were any outliers marked with an asterisk on Form VIII ARO?

☐ ☒ ☐

ACTION: Circle all outliers with a red pencil. If any Surrogate is outside the required limits, qualify their associated target compounds (See Table below) as follows:

Surrogate Compound Recovery Action for Aroclors

Criteria	Action	
	Detected Target Compounds	Non-Detected Target Compounds
%R > 200%	J	No qualification
150% < %R ≤ 200%	J	No qualification
30% ≤ %R ≤ 150%	No qualification	
10% ≤ %R < 30%	J	UJ
%R < 10% (sample dilution not a factor)	J	R
%R < 10% (sample dilution is a factor)	J	Use Professional Judgement
RT out of RT window	Use professional judgment	
RT within RT window	No qualification	

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YES NO N/A

Note: Blank analysis having surrogates out of specification:

The reviewer must give special consideration to the validity of associated samples. Basic concern is whether the blank problems represent an isolated problem with the blank alone or whether there is a fundamental problem with the analytical process. For example, if one or more samples in the batch show acceptable surrogate recoveries, the reviewer may choose to consider the blank problem to be an isolated occurrence.

ACTION: Note in the Data Assessment under Contract Problems/Non-Compliance if the Lab did not perform reanalysis and reviewer's judgment regarding blank problem.

3.5 Are there any transcription/calculation errors between raw data and Form IIs?          ✓

ACTION: If large errors exist, ask the TOPO to obtain an explanation/resubmittal from the lab, make any necessary corrections and note errors in the data assessment.

**4.0 Matrix Spike/Matrix Spike Duplicate Recovery (Form III)**

Note: Data for MS/MSD will not be present unless requested.

4.1 Are the MS/MSD Recovery Forms (Form III ARO) present?          ✓

4.2 Was the MS/MSD analyzed at the required frequency (once per SDG, or every 20 samples, whichever is more frequent)?          ✓

ACTION: If any MS/MSD data are missing, take action as specified in section 3.1 above.

ACTION: No action is taken on MS/MSD data alone. However, using professional judgement, the validator may use the MS and MSD results in conjunction with other QC criteria and determine the need for some qualification of the data. If Any MS/MSD % recovery or RPD is out of specification, qualify data to include the consideration of the existence of interference in the raw data. Consideration include, but not limited to the following "Action":

**Matrix Spike/Matrix Spike Duplicate Action for Aroclor**

Criteria	Action	
	Detected Spike Compounds	Non-detected Spike Compounds
%R or RPD > Upper Acceptance Limit	J	No qualification
20% ≤ %R < Lower Acceptance Limit	J	UJ

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YES NO N/A

%R < 20%	J	Use professional judgement
Lower Acceptance Limit $\leq$ %R; RPD $\leq$ Upper Acceptance Limit	No qualification	

Note: If it can be determined that the results of the MS/MSD affects only the sample spiked, limit qualification to only this sample. However, use professional judgment when it is determined through the MS/MSD results that the laboratory is having systematic problem in the analysis of one or more analytes that affect all associated samples.

## 5.0 Blanks (Form IV)

- 5.1 Is the Aroclor Method Blank Summary (Form IV ARO) present for aqueous and soil samples?

☒ ☐ ☐

- 5.2 Frequency of Analysis: For the analysis of AROCLOR, has a method blank been analyzed for each SDG or every 20 samples, whichever is more frequent?

☒ ☐ ☐

ACTION: If any blank data are missing, take action as specified above in section 3.1. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

- 5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?

☐ ☐ ☒

ACTION: If Form IV sulfur clean-up blank is missing, take action as specified in section 3.1 above.

- 5.4 Has a Aroclor instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?

☒ ☐ ☐

ACTION: If any blank data are missing, take action specified in Section 3.1.

- 5.5 Was the correct identification scheme used for all Aroclor blanks? (See page B-39, section 3.3.7.3 of SOM01.1 for further information)

☒ ☐ ☐

ACTION: Contact the TOPO to obtain resubmittals or make the required corrections on the forms.

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YES NO N/A

Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.

- 5.6 Chromatography: Review the blank raw data chromatogram, quant. Reports and data system printout. Is the chromatographic performance (baseline stability) acceptable for each instrument?

☒ ☐ ☐

ACTION: Use professional judgement to determine the effect on the data.

- 5.7 Are all detected hits for target compounds in method, and field blanks less than the CRQL?

☐ ☐ ☒

ACTION: IF no, an explanation and laboratory's corrective actions must be addressed in the case SDG narrative. Contact TOPO to request from Lab. revised narrative and make a note in the Contract Problems/Non-Compliance section of the Data Assessment.

#### 6.0 Contamination

NOTE: "Water blanks", "drill blanks", and distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

- 6.1 Do any method/reagent or cleanup blanks contain positive hits for target Aroclor compounds with values greater than the CRQL for that analyte?

☐ ☒ ☐

Note: The concentration of each target compound in the instrument blank must be less than the CRQL for that analyte.

ACTION: Make note in data assessment under Contract Problems/Non-Compliance if any blank contains hit above the CRQLs.

- 6.2 Do any instrument blanks contain positive Aroclor results with values greater than CRQLs?

☐ ☒ ☐

ACTION: Take the action specified in section 6.1.

- 6.3 Do any field/rinse blanks have positive Aroclor results?

☐ ☐ ☒

NOTE: All field blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration QC problems.

ACTION: Follow the directions in the table below to qualify results due to contamination. Use the largest value from all the associated

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YES NO N/A

blanks. If any blanks are grossly contaminated, all associated sample data should be qualified unusable (R).

Blank Action for Aroclor Analyses

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field, Sulfur Cleanup, Instrument	Detects	Not detected	No qualification required
	< CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL	No qualification required
	= CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL	No qualification required
	> CRQL	< CRQL	Report CRQL value with a U
		≥ CRQL and < blank contamination	Report concentration of sample with a U
		≥ CRQL and ≥ blank contamination	No qualification required
	Gross contamination	Detects	Qualify results as unusable R

NOTE: Analytes qualified "U" for blank contamination are treated as "hits" when qualifying for calibration criteria.

Note: When applied as described in the table above, the contaminant concentration in the blank are multiplied by the sample dilution factor.

6.4 Are there field/rinse/equipment blanks associated with every sample? 11 ✓

ACTION: Note in data assessment if there's no associated field/rinse/equipment blank.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Aroclor Initial and Continuing Calibration

7.1 Are the following Forms, chromatograms and data system printouts present?

a.) Form VI ARO-1/Aroclor Initial Calibration (Multipoint) ✓



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YES NO N/A

b.) Form VI ARO-2/Aroclor Initial Calibration (Multipoint)

☒ ☐ ☐

c.) Form VI ARO-3/Aroclor Initial Calibration (Singlepoint)

☒ ☐ ☐

d.) Form VII ARO/Aroclor Calibration Verification

☒ ☐ ☐

e.) Form VIII ARO/Aroclor Analytical Sequence

☒ ☐ ☐

f.) Form X ARO/Identification Summary for Multicomponent Analysis

☒ ☐ ☐7.2 Initial Calibration

7.2.1 Was the following contract required initial calibration sequence provided by the laboratory?

☒ ☐ ☐

Initial Calibration Sequence	
1.	Aroclor 1221 CS3 (400ng/ml)
2.	Aroclor 1232 CS3 (400 ng/ml)
3.	Aroclor 1242 CS3 (400 ng/ml)
4.	Aroclor 1248 CS3 (400 ng/ml)
5.	Aroclor 1254 CS3 (400 ng/ml)
6.	Aroclor 1262 CS3 (400 ng/ml)
7.	Aroclor 1268 CS3 (400 ng/ml)
8.	Aroclor1016/1260 (100 ng/ml) CS1
9.	Aroclor1016/1260 (200 ng/ml) CS1
10.	Aroclor1016/1260 (400 ng/ml) CS1
11.	Aroclor1016/1260 (800 ng/ml) CS1
12.	Aroclor1016/1260 (1600 ng/ml) CS1
13.	Instrument Blank

ACTION: If initial calibration is not performed or not performed in the proper sequence, notify the TOPO and make a note in the data assessment.

7.3 Are there any transcription/calculation errors between raw data and the Forms?

☐ ☒

ACTION: If large errors exist, take action specified in section 3.1 above.

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YES NO N/A

7.4 Mean Retention Time (RT) and RT Window

Were the following mean RT and RT window met:

a.) The mean RT of each of the three to five major peaks were determined from the five-point initial calibration for all Aroclors

b.) RT window was calculated as  $\pm 0.07$  for each of the three to five major peaks and  $\pm 0.05$  and  $\pm 0.10$  for the surrogates tetrachloro-m-xylene and decachlorobiphenyl, respectively.

ACTION: If no, follow the action as specified in section 3.1.

7.5 Was at least one chromatogram from each of the Aroclor standards yield peaks that give deflection between 50-100% of full scale?

ACTION: IF no, take action as specified in section 3.1.

7.6 Was the mean Calibration Factor (CF) calculated for the three to five major peaks of each Aroclor, as well as for the surrogates, over the initial calibration range?

7.7 Were the Percent Relative Standard Deviation (%RSD) of the Calibration Factor for the three to five major peaks < 20% of each of the Aroclor compounds and surrogates?

ACTION: If no, take action as specified in the following Table.

Initial Calibration Action for Aroclor Analyses

Criteria	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
Initial calibration is not performed or not performed in proper sequence	Use Professional Judgment and notify Contract Lab Program (CLP) Project Officer	
%RSD exceeds allowable limits *	J	UJ
%RSD within allowable limits *	No qualification	

\* %RSD < 20.0% for Aroclors and surrogates (tetrachloro-m-xylene and decachlorobiphenyl).

7.8 Continuing Calibration Verification (CCV) (Form VII)

Were the Absolute Retention Time (RT) for each Aroclor and surrogate in the mid-point concentration (CS3) of

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YES NO N/A

the Standard used for CCV must be within the RT window determined from the initial calibration?

- 7.9 For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, the Percent Difference (%D) between the CF of each of the three to five peaks used to identify an Aroclor and surrogates in the mid-point concentration (CS3) of the Aroclor standards and the CF from the initial calibration must be within  $\pm 15.0\%$ .
- 7.10 For a closing CCV, the %D between the CF of each of the three to five peaks used to identify an Aroclor and surrogates in the mid-point concentration (CS3) of the Aroclor standards and the CF from the initial calibration must be within  $\pm 50.0\%$ .
- 7.11 No more than 14 hours may elapse from the injection of the instrument Blank that begins an analytical sequence (opening CCV) and the injection of the last mid-point concentration (CS3) of the Aroclor standards that ends an analytical sequence (closing CCV).
- 7.12 No more than 12 hours may elapse from the injection of the instrument blank that begins an analytical sequence (opening CCV and the injection of the last sample or blank that is part of the same analytical sequence.

Were sections 7.8 to 7.12 met?

ACTION: If no, use the following table to qualify Aroclor data:

Continuing Calibration Verification (CCV) Action for Aroclor Analyses

Criteria	Action	
	Detected Associated Compounds	Non-Detected Associated Compounds
RT out of RT Window	Use professional Judgment *	
Percent Difference not within limits $\pm 15\%$ as specified in section 7.9 above	J	UJ
Percent Difference not within limits $\pm 50\%$ as specified in section 7.10 above	J	UJ
Time elapsed is greater than acceptable limits as specified in section 7.11 & 7.12 above	R	
Percent Difference, time elapsed and RT are within acceptable limits	No qualification	

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YES NO N/A

\* For non-detected target compounds in the affected samples, check to see if the sample chromatogram contain any peak that are close to the expected RT window of the Aroclor of interest.

If no peaks are present, consider the non-detected values to be valid and no qualification of the data is necessary.

If any peaks are present close to the expected RT window of the Aroclor of interest, qualify the non-detected values as presumptively present "N".

For detected compounds in the affected samples, if the peaks are within the RT window, no qualification of the data is necessary. If the peaks are close to the expected RT window of the Aroclors of interest, the reviewer may take additional effort to determine if sample peaks represent the compound of interest.

For example, the reviewer can examine the data package for the presence of three or more standards containing the Aroclor of interest that were run within the analytical sequence during which the sample was analyzed. If three or more such standards are present, the RT window can be re-evaluated using the mean RT of the standards.

If the peaks in the affected sample fall within the revised window, qualify the detected Aroclor as "JN".

If the reviewer cannot do anything with the data to resolve the problem of concern, qualify all non-detects as unuseable "R".

#### 8.0 Analytical Sequence Check (Form VIII-ARO)

- 8.1 Is Form VIII-Pest present and complete for each column and each period of analyses? ✓ 1 \_ \_

ACTION: If no, take action as specified in section 3.1

- 8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/ECD instrument used? ✓ 1 \_ \_

ACTION: If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

- 8.3 Are the surrogate retention time (RT) from the initial calibration for TCX and DCB provided on Form VIII-Pest? ✓ 1 \_ \_

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YES NO N/A

ACTION: If no, take action as specified in section 3.1

- 8.4 Was the asterisk (\*) applied to the RT of any blanks, samples, standards, MS/MSD, and LCS that did not meet the QC Limits of  $\pm 0.05$  minutes for TCX (tetrachloro-m-xylene) and  $\pm 0.10$  minutes for DCB (decachlorobiphenyl)?

11 — ✓

ACTION: If any data are missing, take action specified in 3.1 above.

If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Document in the data assessment under Contract Problems/Non-Compliance.

9.0 Sulfuric Acid and Gel Permeation Chromatography (GPC) Cleanup Procedures

- 9.1 Was sulfuric acid added to all extracts?

✓ — —

Note: Sulfuric acid cleanup is mandatory for all extracts.

ACTION: If no, take action specified in section 3.1

9.2 Gel Permeation Chromatography (GPC)

GPC is an optional cleanup procedure for both aqueous and non-aqueous samples that contain high molecular weight compounds that interfere with Aroclor analysis.

- 9.3 If GPC cleanup was performed on samples, GPC calibration is acceptable if the two UV traces meet the following requirements.

- Peaks must be observed and should be symmetrical for all compounds in the calibration solution.
- Corn oil and phthalate peaks should exhibit greater than 85% resolution.
- The phthalate and Methoxychlor peaks should exhibit greater than 85% resolution.
- Methoxychlor and perylene peaks should exhibit greater than 85% resolution.
- Perylene and sulfur peaks must be saturated and should exhibit greater than 90% baseline resolution.

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YES NO N/A

f. The RT shift is less than 5% between UV traces for bis(2-ethylhexylphthalate and perylene.

9.4 Were all above criteria met?

☐ ☐ ☒

ACTION: If no, examine the raw data for the presence of high molecular weight contaminants. Examine the subsequent sample data for unusual peaks and use professional judgment in qualifying the data.

#### 10.0 Laboratory Control Samples (LCSs)

10.1 LCSs provide information on the accuracy of the analytical method and laboratory performance.

#### Aroclor Laboratory Control Sample Recovery - Aqueous and Non-Aqueous

Compound	% Recovery QC Limits
Aroclor 1016	50 - 150
Aroclor 1260	50 - 150
Tetrachloro-m-xylene (surrogate)	30 - 150
Decachlorobiphenyl (surrogate)	30 - 150

10.2 Were the above recoveries met?

☒ ☐ ☐

ACTION: If no, qualify the sample data as follows:

Criteria	ACTION	
	Detected Associated Compound	Non-Detected Associated Compound
%R> Upper Acceptance Limit	J	No qualification
%R< Lower Acceptance Limit	J	R
Lower Acceptance Limit < %R < Upper Acceptance Limit	No qualification	

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YES NO N/A

11.0 Aroclor Identification (Form X ARO/Identification Summary for Multicomponent Analysis)

- 11.1 Is Form X (ARO) complete for every sample in which Aroclor was detected?

☒ YES ☐ NO ☐ N/A

ACTION: Take action as specified in section 3.1 above.

- 11.2 The identification of a Multi component Aroclor by GC method is based primarily on RT data and pattern recognition. Were the following requirements met:

☒ YES ☐ NO ☐ N/A

- a.) A Minimum of 3 major peaks were selected for each Aroclor. If more than one Aroclor is observed in a sample, a peak common to other Aroclor(s) must not be used to quantitate other Aroclor. Lab must choose different peaks to quantitate each Aroclor.
- b.) If a chromatogram is replotted electronically to meet these requirements, the scaling factor used must be displayed on the chromatogram, and both the initial chromatogram and the replotted chromatogram must be submitted in the data package.
- c.) The Retention Time (RT) of both of the surrogates and reported target compounds must be within the calculated RT window of both columns.
- d.) When no analytes are identified in the sample, the chromatograms of the sample extract must use the same scaling factor used for the low-point standard of the initial calibration associated with those samples.
- e.) Chromatogram must display the largest peak of any Aroclor detected in the sample at less than full scale.
- f.) If an extract must be diluted, chromatograms must display Aroclor peaks between 25-100% of full scale.

ACTION: If retention times (RT) or peak apex cannot be verified, contact TOPO to obtain rescaled chromatograms from the lab.

If data reviewer identifies a peak in both GC columns that fall within the appropriate RT windows, but was reported as

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YES NO N/A

non-detect, the compound may be false negative. If necessary, contact TOPO to instruct laboratory to re-evaluate the chromatograms.

- 11.3 Are there any transcription/calculation errors in Form I and Form X ARO? ☐ ☐ ☒

ACTION: Take action as specified in section 3.1 above.

- 11.4 Are the RTs of Aroclor peaks within the established RT window for analyses on both columns? ☒ ☐ ☐

- 11.5 Was the GC/MS confirmation provided for Aroclor concentration > 10 ug/ml in final extract? ☐ ☐ ☒

NOTE: Laboratory is required to contact SMO to determine if GC/MS confirmation is required. Check the semivolatile TIC data for presence of Aroclors.

- 11.6 Is the per cent difference (%D) calculated for positive results on both columns < 25%? ☐ ☒ ☐

Action: Reviewer must check columns for peak interferences for the positive hits. Qualify the Arclor (s) according to the following Table:

Action on Qualifying Positive Aroclor Results

Percent Differences	Qualifier
0 - 25%	None
26 - 70%	"J"
71 - 100%	"JN"
101 - 200% (No Peak Interferences)	"R"
101 - 200% (Interferences detected)*	"JN"



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YES NO N/A

> 50% (Aroclor value < CRQL)**	"U"
> 200%	"R"

\* When interferences is detected on either column, qualify the data as "JN"

\*\* When the Aroclor value is below CRQL and %D > 50%, raise the value to CRQL and qualify "U", undetected.

### 12.0 Target Aroclor List (TCL)

12.1 Are the Aroclor Analysis Data Sheets (Form I ARO) present with required header information on each page for samples, MS/MSD (if required), method and instrument blanks (per column & analysis)?

☒ ☐ ☐

12.2 Is the chromatographic performance acceptable with respect to baseline stability, full-scale attenuation, peak shape/resolution?

☒ ☐ ☐

ACTION: If no, take action specified in section 3.1 above.

### 13.0 Compound Quantitation and Reported Detection Limits

13.1 Are there any transcription/calculation errors in the Form I results? Check at least two positive results. Were any errors found?

☐ ☐ ☒

ACTION: If errors were found, take action as specified in section 3.1 above.

13.2 Are the contract required quantitation limits (CRQL) adjusted to reflect sample dilution?

☒ ☐ ☐

ACTION: If errors exist, take action as specified in section 3.1 above.

ACTION: When a sample is required to be diluted, the lowest CRQL is used (unless a QC exceedance dictates the use of the higher CRQL from the diluted sample). Replace concentration which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I to use.

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YES NO N/A

Use a red pencil and draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

At the top or bottom of the Forms, write with red pencil, "DO Not Use".

Note: If the sample dilution factor (DF) is greater than 10, an additional 10 times more concentrated than the diluted sample extract must be analyzed and reported with the sample data. If the DF is less or equal to 10, but greater than 1, the results of the original undiluted analysis must also be reported (see SOM01.1/section 10.3.3.4/page D-44/ARO).

ACTION: IF the above requirement was not met, contact the TOPO to obtain an explanation/resubmittal from the lab and make a note in the Data Assessment under Contract Problems/Non-Compliance section.

13.3 For non-aqueous samples, were the percent moisture < 70%? ☒ 1      

Action: If the % moisture  $\geq 70.0\%$  and  $< 90.0\%$ , qualify detects as "J" and non-detects as approximated "UJ" If the % Moisture  $\geq 90\%$ , qualify detects as "J" and non-detects as "R"

## 14.0 Field Duplicates

14.1 Were any field duplicates submitted for Aroclor analysis? ☒ 1      

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. If large differences exist, contact the TOPO to confirm identification of field duplicates with the sampler.

2/3/88.  
RA  
☒ 1

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YES NO N/A

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YES NO N/A

## Definitions

ARO - Aroclor  
CCS - contract compliance screening  
CF - Calibration Factor  
CLASS - Contract Laboratory Analytical Services Support  
CLP - Contract Laboratory Program  
CRQL - Contract Required Quantitation Limit  
GC/ECD - Gas Chromatography/Electron Capture Detector  
kg - kilogram  
µg - microgram  
l - liter  
ml - milliliter  
QC - quality control  
RAS - Routine Analytical Services  
RPD - Relative Percent Difference  
RRF - Relative Response Factor  
RRF - Average Relative Response Factor (from initial calibration)  
RRT - Relative Retention Time  
RSD - Relative Standard Deviation  
RT - Retention Time  
RSCC - Regional Sample Control Center  
SDG - Sample Delivery Group  
SOP - standard operating procedure  
SOW - Statement of Work  
TCL - Target Compound List  
TCLP - Toxicity Characteristics Leachate Procedure  
TIC - Tentatively Identified Compound  
TPO - Technical Project Officer  
VTSR - Validated Time of Sample Receipt  
TOPO - Task Order Project Officer

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YES NO N/A

**References**

1. USEPA Contract Laboratory Program of Work for Organic Analysis Multi-Media, Multi-Concentration, SOW/CLP/SOM01.2, February 2007.
2. National Functional Guidelines for Superfund Organic Methods Data Review July 2007.

1H - FORM I ARO  
AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR2

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1G3837F.D/E1G3837R.D

% Moisture: 52 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		69	U
11104-28-2	Aroclor-1221		69	U
11141-16-5	Aroclor-1232		69	U
53469-21-9	Aroclor-1242		69	U
12672-29-6	Aroclor-1248		69	U
11097-69-1	Aroclor-1254		800	U
11096-82-5	Aroclor-1260		69	U
37324-23-5	Aroclor-1262		69	U
11100-14-4	Aroclor-1268		69	U

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 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR7

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-02A  
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1G3840F.D/E1G3840R.D  
 % Moisture: 41 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	56	U
11104-28-2	Aroclor-1221	56	U
11141-16-5	Aroclor-1232	56	U
53469-21-9	Aroclor-1242	56	U
12672-29-6	Aroclor-1248	56	U
11097-69-1	Aroclor-1254	2600 <del>2900</del>	U * 3
11096-82-5	Aroclor-1260	56	U
37324-23-5	Aroclor-1262	56	U
11100-14-4	Aroclor-1268	56	U

\* Reported from B4QR7DL

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EPA SAMPLE NO.

B4QR8

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-03A  
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1G3841F.D/E1G3841R.D  
 % Moisture: 25 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		44	U
11104-28-2	Aroclor-1221		44	U
11141-16-5	Aroclor-1232		44	U
53469-21-9	Aroclor-1242		44	U
12672-29-6	Aroclor-1248		44	U
11097-69-1	Aroclor-1254		690	
11096-82-5	Aroclor-1260		44	U
37324-23-5	Aroclor-1262		44	U
11100-14-4	Aroclor-1268		44	U



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EPA SAMPLE NO.

B4QR9

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-04A  
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1G3842F.D/E1G3842R.D  
 % Moisture: 24 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		43	U
11104-28-2	Aroclor-1221		43	U
11141-16-5	Aroclor-1232		43	U
53469-21-9	Aroclor-1242		43	U
12672-29-6	Aroclor-1248		43	U
11097-69-1	Aroclor-1254		500	
11096-82-5	Aroclor-1260		43	U
37324-23-5	Aroclor-1262		43	U
11100-14-4	Aroclor-1268		43	U

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 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS0

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-05A  
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1G3843F.D/E1G3843R.D  
 % Moisture: 28 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	46	U
11141-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	46	U
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	670	
11096-82-5	Aroclor-1260	46	U
37324-23-5	Aroclor-1262	46	U
11100-14-4	Aroclor-1268	46	U

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EPA SAMPLE NO.

B4QS1

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-06A  
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1G3844F.D/E1G3844R.D  
 % Moisture: 22 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000. (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		42	U
11104-28-2	Aroclor-1221		42	U
11141-16-5	Aroclor-1232		42	U
53469-21-9	Aroclor-1242		42	U
12672-29-6	Aroclor-1248		42	U
11097-69-1	Aroclor-1254		120	
11096-82-5	Aroclor-1260		42	U
37324-23-5	Aroclor-1262		42	U
11100-14-4	Aroclor-1268		42	U

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EPA SAMPLE NO.

B4QS2

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1G3845F.D/E1G3845R.D

% Moisture: 26 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.8 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		44	U
11104-28-2	Aroclor-1221		44	U
11141-16-5	Aroclor-1232		44	U
53469-21-9	Aroclor-1242		44	U
12672-29-6	Aroclor-1248		44	U
11097-69-1	Aroclor-1254		180	U
11096-82-5	Aroclor-1260		44	U
37324-23-5	Aroclor-1262		44	U
11100-14-4	Aroclor-1268		44	U

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EPA SAMPLE NO.

B4QS3

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-08A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1G3846F.D/E1G3846R.D

% Moisture: 20 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		41	U
11104-28-2	Aroclor-1221		41	U
11141-16-5	Aroclor-1232		41	U
53469-21-9	Aroclor-1242		41	U
12672-29-6	Aroclor-1248		41	U
11097-69-1	Aroclor-1254		180	
11096-82-5	Aroclor-1260		41	U
37324-23-5	Aroclor-1262		41	U
11100-14-4	Aroclor-1268		41	U

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 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS4

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-09A  
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1G3847F.D/E1G3847R.D  
 % Moisture: 41 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		56	U
11104-28-2	Aroclor-1221		56	U
11141-16-5	Aroclor-1232		56	U
53469-21-9	Aroclor-1242		56	U
12672-29-6	Aroclor-1248		56	U
11097-69-1	Aroclor-1254		260	
11096-82-5	Aroclor-1260		56	U
37324-23-5	Aroclor-1262		56	U
11100-14-4	Aroclor-1268		56	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS5

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab. Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-10A  
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1G3848F.D/E1G3848R.D  
 % Moisture: 32 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		48	U
11104-28-2	Aroclor-1221		48	U
11141-16-5	Aroclor-1232		48	U
53469-21-9	Aroclor-1242		48	U
12672-29-6	Aroclor-1248		48	U
11097-69-1	Aroclor-1254		170	U
11096-82-5	Aroclor-1260		48	U
37324-23-5	Aroclor-1262		48	U
11100-14-4	Aroclor-1268		48	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS6

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-11A  
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1G3849F.D/E1G3849R.D  
 % Moisture: 50 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.5 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	65	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	65	U
53469-21-9	Aroclor-1242	65	U
12672-29-6	Aroclor-1248	65	U
11097-69-1	Aroclor-1254	910	73
11096-82-5	Aroclor-1260	65	U
37324-23-5	Aroclor-1262	65	U
11100-14-4	Aroclor-1268	65	U



1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS7

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1G3850F.D/E1G3850R.D

% Moisture: 44 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.6 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		58	U
11104-28-2	Aroclor-1221		58	U
11141-16-5	Aroclor-1232		58	U
53469-21-9	Aroclor-1242		58	U
12672-29-6	Aroclor-1248		58	U
11097-69-1	Aroclor-1254		800	U
11096-82-5	Aroclor-1260		58	U
37324-23-5	Aroclor-1262		58	U
11100-14-4	Aroclor-1268		58	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS8

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-13A  
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1G3851F.D/E1G3851R.D  
 % Moisture: 42 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.8 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		56	U
11104-28-2	Aroclor-1221		56	U
11141-16-5	Aroclor-1232		56	U
53469-21-9	Aroclor-1242		56	U
12672-29-6	Aroclor-1248		56	U
11097-69-1	Aroclor-1254		1100 700 / *	
11096-82-5	Aroclor-1260		56	U
37324-23-5	Aroclor-1262		56	U
11100-14-4	Aroclor-1268		56	U

\* Reported from B4QS8DL

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QS9

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-14A  
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1G3852F.D/E1G3852R.D  
 % Moisture: 50 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.7 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		66	U
11104-28-2	Aroclor-1221		66	U
11141-16-5	Aroclor-1232		66	U
53469-21-9	Aroclor-1242		66	U
12672-29-6	Aroclor-1248		66	U
11097-69-1	Aroclor-1254		870	U
11096-82-5	Aroclor-1260		66	U
37324-23-5	Aroclor-1262		66	U
11100-14-4	Aroclor-1268		66	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QT0

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-15A  
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1G3853F.D/E1G3853R.D  
 % Moisture: 50 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		66	U
11104-28-2	Aroclor-1221		66	U
11141-16-5	Aroclor-1232		66	U
53469-21-9	Aroclor-1242		66	U
12672-29-6	Aroclor-1248		66	U
11097-69-1	Aroclor-1254		920	
11096-82-5	Aroclor-1260		66	U
37324-23-5	Aroclor-1262		66	U
11100-14-4	Aroclor-1268		66	U

1H - FORM I PEST  
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR2MS(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-01AMS

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1G3838F.D

% Moisture: 52 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	
12674-11-2	Aroclor-1016	270	Q
11104-28-2	Aroclor-1221	68	U
11141-16-5	Aroclor-1232	68	U
53469-21-9	Aroclor-1242	68	U
12672-29-6	Aroclor-1248	68	U
11097-69-1	Aroclor-1254	1100 850	
11096-82-5	Aroclor-1260	510	U
37324-23-5	Aroclor-1262	68	U
11100-14-4	Aroclor-1268	68	U

1H - FORM I PEST  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR2MSD(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0033-01AMSD  
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1G3839F.D  
 % Moisture: 52 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.2 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	
12674-11-2	Aroclor-1016	240	Q
11104-28-2	Aroclor-1221	68	U
11141-16-5	Aroclor-1232	68	U
53469-21-9	Aroclor-1242	68	U
12672-29-6	Aroclor-1248	68	U
11097-69-1	Aroclor-1254	1300 1000	J
11096-82-5	Aroclor-1260	540	J
37324-23-5	Aroclor-1262	68	U
11100-14-4	Aroclor-1268	68	U

1H - FORM I PEST  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ALCS1S(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QR2  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: LCS-34243  
 Sample wt/vol: 30 (g/mL) G Lab File ID: E1G3835F.D  
 % Moisture: 0.0 Decanted: (Y/N) N Date Received:  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		40 36	
11104-28-2	Aroclor-1221		33	U
11141-16-5	Aroclor-1232		33	U
53469-21-9	Aroclor-1242		33	U
12672-29-6	Aroclor-1248		33	U
11097-69-1	Aroclor-1254		33	U
11096-82-5	Aroclor-1260		46 45	
37324-23-5	Aroclor-1262		33	U
11100-14-4	Aroclor-1268		33	U

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AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP5

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8707F.D/E2G8707R.D

% Moisture: 29 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		46	U
11104-28-2	Aroclor-1221		46	U
11141-16-5	Aroclor-1232		46	U
53469-21-9	Aroclor-1242		46	U
12672-29-6	Aroclor-1248		46	U
11097-69-1	Aroclor-1254		200	
11096-82-5	Aroclor-1260		46	U
37324-23-5	Aroclor-1262		46	U
11100-14-4	Aroclor-1268		46	U



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 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP6

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-02A  
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: E2G8708F.D/E2G8708R.D  
 % Moisture: 17 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.2 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		39	U
11104-28-2	Aroclor-1221		39	U
11141-16-5	Aroclor-1232		39	U
53469-21-9	Aroclor-1242		39	U
12672-29-6	Aroclor-1248		39	U
11097-69-1	Aroclor-1254		54	
11096-82-5	Aroclor-1260		39	U
37324-23-5	Aroclor-1262		39	U
11100-14-4	Aroclor-1268		39	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP7

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-03A  
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2G8709F.D/E2G8709R.D  
 % Moisture: 42 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		57	UJ
11104-28-2	Aroclor-1221		57	UJ
11141-16-5	Aroclor-1232		57	UJ
53469-21-9	Aroclor-1242		57	UJ
12672-29-6	Aroclor-1248		57	UJ
11097-69-1	Aroclor-1254	470	870	UJ *
11096-82-5	Aroclor-1260		57	UJ
37324-23-5	Aroclor-1262		57	UJ
11100-14-4	Aroclor-1268		57	UJ

\* Reported from B4QP7DL

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP8

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-04A  
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2G8712F.D/E2G8712R.D  
 % Moisture: 46 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.3 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
12674-11-2	Aroclor-1016	61	U
11104-28-2	Aroclor-1221	61	U
11141-16-5	Aroclor-1232	61	U
53469-21-9	Aroclor-1242	61	U
12672-29-6	Aroclor-1248	61	U
11097-69-1	Aroclor-1254	250	
11096-82-5	Aroclor-1260	61	U
37324-23-5	Aroclor-1262	61	U
11100-14-4	Aroclor-1268	61	U

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 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP9

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-05A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2G8713F.D/E2G8713R.D

% Moisture: 40 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	55	U
11141-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	330	U
11096-82-5	Aroclor-1260	55	U
37324-23-5	Aroclor-1262	55	U
11100-14-4	Aroclor-1268	55	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ0

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-06A  
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8714F.D/E2G8714R.D  
 % Moisture: 48 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		63	U
11104-28-2	Aroclor-1221		63	U
11141-16-5	Aroclor-1232		63	U
53469-21-9	Aroclor-1242		63	U
12672-29-6	Aroclor-1248		63	U
11097-69-1	Aroclor-1254		290	
11096-82-5	Aroclor-1260		63	U
37324-23-5	Aroclor-1262		63	U
11100-14-4	Aroclor-1268		63	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ1

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-07A  
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2G8715F.D/E2G8715R.D  
 % Moisture: 31 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	47	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	160	
11096-82-5	Aroclor-1260	47	U
37324-23-5	Aroclor-1262	47	U
11100-14-4	Aroclor-1268	47	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ2

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-08A  
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2G8716F.D/E2G8716R.D  
 % Moisture: 29 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.2 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	46	U
11141-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	46	U
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	140	
11096-82-5	Aroclor-1260	46	U
37324-23-5	Aroclor-1262	46	U
11100-14-4	Aroclor-1268	46	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ3

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-09A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8735F.D/E2G8735R.D

% Moisture: 32 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.1 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: <u>UG/KG</u> (ug/L or ug/Kg)	<u>Q</u>
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	48	U
11141-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	340	
11096-82-5	Aroclor-1260	48	U
37324-23-5	Aroclor-1262	48	U
11100-14-4	Aroclor-1268	48	U



1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ4

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2G8736F.D/E2G8736R.D

% Moisture: 27 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		45	U
11104-28-2	Aroclor-1221		45	U
11141-16-5	Aroclor-1232		45	U
53469-21-9	Aroclor-1242		45	U
12672-29-6	Aroclor-1248		45	U
11097-69-1	Aroclor-1254		260	
11096-82-5	Aroclor-1260		45	U
37324-23-5	Aroclor-1262		45	U
11100-14-4	Aroclor-1268		45	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ5

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-11A  
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2G8737F.D/E2G8737R.D  
 % Moisture: 23 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.2 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	43	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	200	
11096-82-5	Aroclor-1260	43	U
37324-23-5	Aroclor-1262	43	U
11100-14-4	Aroclor-1268	43	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ6

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-12A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2G8738F.D/E2G8738R.D

% Moisture: 17 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: <u>UG/KG</u> (ug/L or ug/Kg)	<u>Q</u>
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	98	
11096-82-5	Aroclor-1260	40	U
37324-23-5	Aroclor-1262	40	U
11100-14-4	Aroclor-1268	40	U

1H - FORM I ARO  
AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ7

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-13A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8739F.D/E2G8739R.D

% Moisture: 20 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		41	U
11104-28-2	Aroclor-1221		41	U
11141-16-5	Aroclor-1232		41	U
53469-21-9	Aroclor-1242		41	U
12672-29-6	Aroclor-1248		41	U
11097-69-1	Aroclor-1254		35	J
11096-82-5	Aroclor-1260		41	U
37324-23-5	Aroclor-1262		41	U
11100-14-4	Aroclor-1268		41	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QQ8

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-14A  
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2G8740F.D/E2G8740R.D  
 % Moisture: 27 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.8 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		45	U
11104-28-2	Aroclor-1221		45	U
11141-16-5	Aroclor-1232		45	U
53469-21-9	Aroclor-1242		45	U
12672-29-6	Aroclor-1248		45	U
11097-69-1	Aroclor-1254		25 45	U
11096-82-5	Aroclor-1260		45	U
37324-23-5	Aroclor-1262		45	U
11100-14-4	Aroclor-1268		45	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR0

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-15A  
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2G8741F.D/E2G8741R.D  
 % Moisture: 44 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		59	U
11104-28-2	Aroclor-1221		59	U
11141-16-5	Aroclor-1232		59	U
53469-21-9	Aroclor-1242		59	U
12672-29-6	Aroclor-1248		59	U
11097-69-1	Aroclor-1254		370	P J
11096-82-5	Aroclor-1260		59	U
37324-23-5	Aroclor-1262		59	U
11100-14-4	Aroclor-1268		59	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR1

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-16A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2G8742F.D/E2G8742R.D

% Moisture: 60 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.3 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		82	U
11104-28-2	Aroclor-1221		82	U
11141-16-5	Aroclor-1232		82	U
53469-21-9	Aroclor-1242		82	U
12672-29-6	Aroclor-1248		82	U
11097-69-1	Aroclor-1254		320	
11096-82-5	Aroclor-1260		82	U
37324-23-5	Aroclor-1262		82	U
11100-14-4	Aroclor-1268		82	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR3

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-17A  
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2G8743F.D/E2G8743R.D  
 % Moisture: 55 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.2 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: <u>UG/KG</u> (ug/L or ug/Kg)	<u>Q</u>
12674-11-2	Aroclor-1016	73	U
11104-28-2	Aroclor-1221	73	U
11141-16-5	Aroclor-1232	73	U
53469-21-9	Aroclor-1242	73	U
12672-29-6	Aroclor-1248	73	U
11097-69-1	Aroclor-1254	400	
11096-82-5	Aroclor-1260	73	U
37324-23-5	Aroclor-1262	73	U
11100-14-4	Aroclor-1268	73	U



1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR4

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-18A  
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: E2G8744F.D/E2G8744R.D  
 % Moisture: 32 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.9 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	48	U
11141-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	690	
11096-82-5	Aroclor-1260	48	U
37324-23-5	Aroclor-1262	48	U
11100-14-4	Aroclor-1268	48	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR5

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-19A  
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2G8745F.D/E2G8745R.D  
 % Moisture: 21 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.1 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	260	
11096-82-5	Aroclor-1260	42	U
37324-23-5	Aroclor-1262	42	U
11100-14-4	Aroclor-1268	42	U

1H - FORM I ARO  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QR6

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-20A  
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8746F.D/E2G8746R.D  
 % Moisture: 42 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/15/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 5.9 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	57	U
11104-28-2	Aroclor-1221	57	U
11141-16-5	Aroclor-1232	57	U
53469-21-9	Aroclor-1242	57	U
12672-29-6	Aroclor-1248	57	U
11097-69-1	Aroclor-1254	2600 1200	EP J *
11096-82-5	Aroclor-1260	57	U
37324-23-5	Aroclor-1262	57	U
11100-14-4	Aroclor-1268	57	U

\* Reported from B4QR6 DL

1H - FORM I PEST  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ALCS2M(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: LCS-34242  
 Sample wt/vol: 30 (g/mL) G Lab File ID: E2G8706F.D  
 % Moisture: 0.0 Decanted: (Y/N) N Date Received:  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG (ug/L or ug/Kg)	Q
12674-11-2	Aroclor-1016	37 35	
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	43 35	
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

1H - FORM I PEST  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP7MS(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030  
 Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5  
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-03AMS  
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2G8710F.D  
 % Moisture: 42 Decanted: (Y/N) N Date Received: 01/09/2008  
 Extraction: (Type) SONC Date Extracted: 01/10/2008  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008  
 Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) Y  
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	UG/KG	Q
12674-11-2	Aroclor-1016		290-230	UJ
11104-28-2	Aroclor-1221		56	UJ
11141-16-5	Aroclor-1232		56	UJ
53469-21-9	Aroclor-1242		56	UJ
12672-29-6	Aroclor-1248		56	UJ
11097-69-1	Aroclor-1254		640	UJ
11096-82-5	Aroclor-1260		880	UJ
37324-23-5	Aroclor-1262		56	UJ
11100-14-4	Aroclor-1268		56	UJ

1H - FORM I PEST  
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B4QP7MSD(1)

Lab Name: MITKEM LABORATORIES Contract: EP-W-05-030

Lab Code: MITKEM Case No.: 37088 Mod. Ref No.: SDG No.: B4QP5

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: G0032-03AMSD

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2G8711F.D

% Moisture: 42 Decanted: (Y/N) N Date Received: 01/09/2008

Extraction: (Type) SONC Date Extracted: 01/10/2008

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/14/2008

Injection Volume: 1.0 (uL) GPC Factor: 1.00 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) Y

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: <u>UG/KG</u> (ug/L or ug/Kg)	<u>Q</u>
12674-11-2	Aroclor-1016	<del>540</del> 390	<del>U</del> J
11104-28-2	Aroclor-1221	57	U
11141-16-5	Aroclor-1232	57	U
53469-21-9	Aroclor-1242	57	U
12672-29-6	Aroclor-1248	57	U
11097-69-1	Aroclor-1254	780	P J
11096-82-5	Aroclor-1260	1100	<del>U</del> J
37324-23-5	Aroclor-1262	57	U
11100-14-4	Aroclor-1268	57	U

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JAN 30 2008

## SDG Narrative

HAZ. WASTE SUPPORT SEC

Mitkem Corporation submits the enclosed data package in response to USEPA Case # 37088 and SDG# B4QP5. Analyses were performed for twenty soil samples that were received on January 9, 2008. The analyses were performed under USEPA Contract # EP-W-05-030. Please note that two sample-shipping cooler received on January 9 with the coolers measuring 4°C and 5°C. The sample shipping cooler received on January 9 was measured 5°C.

Tags were not received with the samples. Per the Region, proceed with analysis of the samples. Region 2 does not require sample tags.

The following samples are submitted in this data package:

<u>Client ID</u>	<u>Lab ID</u>	<u>Analysis</u>
B4QP5	G0032-01A	A
B4QP6	G0032-02A	A
B4QP7	G0032-03A	A
B4QP7DL	G0032-03ADL	A
B4QP7MS	G0032-03AMS	A
B4QP7MSD	G0032-03AMSD	A
B4QP8	G0032-04A	A
B4QP9	G0032-05A	A
B4QQ0	G0032-06A	A
B4QQ1	G0032-07A	A
B4QQ2	G0032-08A	A
B4QQ3	G0032-09A	A
B4QQ4	G0032-10A	A
B4QQ5	G0032-11A	A
B4QQ6	G0032-12A	A
B4QQ7	G0032-13A	A
B4QQ8	G0032-14A	A
B4QR0	G0032-15A	A
B4QR1	G0032-16A	A
B4QR3	G0032-17A	A
B4QR4	G0032-18A	A
B4QR4DL	G0032-18ADL	A
B4QR5	G0032-19A	A
B4QR6	G0032-20A	A
B4QR6DL	G0032-20ADL	A

A = Aroclors

The analyses were performed using USEPA CLP Multi-Media, Multi-Concentration (SOM01.2) protocols. The analyses were performed with strict adherence to the SOW with the following exceptions and observations:

#### 1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

#### 2. Aroclor Analysis

GC column used: 30 m x 0.53 mm id (0.42 um film thickness) CLPPestII and 30 m x 0.53 mm id (0.5 um film thickness) CLPPest megabore columns

The following equation was used to calculate the concentration of target analytes for soil samples:

$$\text{Concentration (ug/Kg)} = (\text{Amt})(\text{DF})(\text{Uf}) \left( \frac{V_t}{(V_i * \text{WS} * \left( \frac{100 - m}{100} \right))} \right)$$

where: Amt = Lower value of two Conc

DF = Dilution factor

UF = ng unit correction factor

WS = Weight of sample extracted (g)

Vt = Volume of final extract (uL)

Vi = Volume injected (uL)

M = %moisture (not decanted)



Surrogate recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in one column for samples B4QP7 and B4QP7MS.

Spike recoveries were within the QC limits in the lab control sample.

Matrix spike and matrix spike duplicate were performed on sample B4QP7. Spike recoveries were within the advisory QC limits with the exception of high recovery of Aroclor 1260 in the matrix spike and high recovery of Aroclors 1016 and 1260 in the matrix spike duplicate for both columns. Replicate RPDs were within the advisory QC limits with the exception of Aroclors 1016 and 1260 for CLPPest and Aroclor 1016 in column CLPPestII. Please note that the spike recovery and replicate precision for both Aroclors could not be accurately determined due to the high concentration of Aroclor 1254 in the native sample.

The following samples were re-analyzed at dilution due to one peak exceeding the instrument calibration range for both the front and rear columns even though there is no "E" qualifier on Form 1: B4QP7 (5x) and B4QR4 (5x).

To ensure that all target analytes were determined within the instrument calibration range, sample B4QR6 was re-analyzed at 5x dilution.

Per the Region, GC/MS confirmation is not required for those samples in which the Aroclor concentration is greater than 3300ug/Kg.

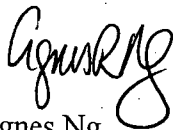
No manual integrations were performed.

No other unusual observation was made for the analysis.

All of the submittals to the region are originals other than logbook pages. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. Tunes, calibration verifications and initial calibrations that are shared among several cases are photocopies indicating the location of the originals.

I certify that this Sample Data Package is in compliance with the terms and condition of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the

electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

A handwritten signature in black ink, appearing to read 'Agnes Ng', written in a cursive style.

Agnes Ng  
CLP Project Manager  
01/29/08

**RECEIVED****JAN 30 2008****SDG Narrative****HAZ. WASTE SUPPORT SEC**

Mitkem Corporation submits the enclosed data package in response to USEPA Case # 37088 and SDG# B4QR2. Analyses were performed for fifteen soil samples that were received on January 9, 2008. The analyses were performed under USEPA Contract # EP-W-05-030. Please note that two sample-shipping cooler received on January 9 with the coolers measuring 4°C and 5°C. The sample shipping cooler received on January 9 was measured 5°C.

Samples B4QR2 and B4QS4 are both designated as samples for laboratory QC on the TR/COC. Per the Region, the laboratory may select a sample for laboratory QC. Laboratory QC will be performed on sample B4QR2.

Tags were not received with the samples. Per the Region, proceed with analysis of the samples. Region 2 does not require sample tags.

The following samples are submitted in this data package:

<u>Client ID</u>	<u>Lab ID</u>	<u>Analysis</u>
B4QR2	G0033-01A	A
B4QR2DL	G0033-01ADL	A
B4QR2MS	G0033-01AMS	A
B4QR2MSD	G0033-01AMSD	A
B4QR7	G0033-02A	A
B4QR7DL	G0033-02ADL	A
B4QR8	G0033-03A	A
B4QR8DL	G0033-03ADL	A
B4QR9	G0033-04A	A
B4QS0	G0033-05A	A
B4QS0DL	G0033-05ADL	A
B4QS1	G0033-06A	A
B4QS2	G0033-07A	A
B4QS3	G0033-08A	A
B4QS4	G0033-09A	A
B4QS5	G0033-10A	A
B4QS6	G0033-11A	A
B4QS6DL	G0033-11ADL	A
B4QS7	G0033-12A	A
B4QS7DL	G0033-12ADL	A
B4QS8	G0033-13A	A
B4QS8DL	G0033-13ADL	A
B4QS9	G0033-14A	A
B4QS9DL	G0033-14ADL	A
B4QT0	G0033-15A	A

B4QT0DL

G0033-15ADL

A

A = Aroclors

The analyses were performed using USEPA CLP Multi-Media, Multi-Concentration (SOM01.2) protocols. The analyses were performed with strict adherence to the SOW with the following exceptions and observations:

#### 1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.
- M6 software did not integrate peak
- M7 partial peak integration

#### 2. Aroclor Analysis

GC column used: 30 m x 0.53 mm id (0.42 um film thickness) CLPPestII and 30 m x 0.53 mm id (0.5 um film thickness) CLPPest megabore columns

The following equation was used to calculate the concentration of target analytes for soil samples:

$$\text{Concentration (ug/Kg)} = (\text{Amt})(\text{DF})(\text{Uf}) \left( \frac{V_t}{(V_i * \text{WS} * \left( \frac{100 - m}{100} \right))} \right)$$

where: Amt = Lower value of two Conc

DF = Dilution factor  
UF = ng unit correction factor  
WS = Weight of sample extracted (g)  
Vt = Volume of final extract (uL)  
Vi = Volume injected (uL)  
M = %moisture (not decanted)

Surrogate recoveries were within the QC limits.

Spike recoveries were within the QC limits in the lab control sample.

Matrix spike and matrix spike duplicate were performed on sample B4QR2. Spike recoveries were within the advisory QC limits with the exception of high recovery of Aroclor 1260 in the matrix spike and matrix spike duplicate for column CLPPestII and high recovery of both Aroclors in both the matrix spike and matrix spike duplicate for column CLPPest. Replicate RPDs were within the advisory QC limits. Please note that the spike recovery for both Aroclors could not be accurately determined due to the high concentration of Aroclor 1254 in the native sample.

The following samples were re-analyzed at dilution due to one peak exceeding the instrument calibration range for both the front and rear columns even though there is no "E" qualifier on Form 1: B4QR2 (10x), B4QR8 (3x), B4QS0 (2x), B4QS6 (5x), B4QS7 (5x), B4QS8 (5x), B4QS9 (5x) and B4QT0 (5x).

To ensure that all target analytes were determined within the instrument calibration range, sample B4QR7 was re-analyzed at 10x dilution.

Per the Region, GC/MS confirmation is not required for those samples in which the Aroclor concentration is greater than 3300ug/Kg.

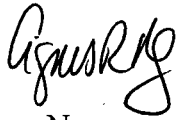
Manual integration was performed on Aroclor 1242 in AR12421H1 due to M4.

No other unusual observation was made for the analysis.

All of the submittals to the region are originals other than logbook pages. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. Tunes, calibration verifications and initial calibrations that are shared among several cases are photocopies indicating the location of the originals.

I certify that this Sample Data Package is in compliance with the terms and condition of the contract, both technically and for completeness, for other than the conditions detailed

above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

A handwritten signature in black ink, appearing to read 'Agnes Ng', written in a cursive style.

Agnes Ng  
CLP Project Manager  
01/29/08



Contract Laboratory Program

RECEIVED  
JAN 30 2008  
HAZ. WASTE SUPPORT SEC

## Sample Delivery Group (SDG)

### Cover Sheet

SDG Number B4QP5

Laboratory Name	Mitkem Laboratories	Lab Code	MITKEM
Contract No.	EP-W-05-030	Case No.	37088
Analysis Price	\$ 0.00	SDG Turnaround	21 days

EPA Sample Numbers in SDG (Listed in Numerical Order)

01) B4QP5	08) B4QQ0	15) B4QQ7	22) B4QR6
02) B4QP6	09) B4QQ1	16) B4QQ8	
03) B4QP7	10) B4QQ2	17) B4QR0	
04) B4QP7MS	11) B4QQ3	18) B4QR1	
05) B4QP7MSD	12) B4QQ4	19) B4QR3	
06) B4QP8	13) B4QQ5	20) B4QR4	
07) B4QP9	14) B4QQ6	21) B4QR5	

First Sample in SDG

B4QP5

Last Sample in SDG

B4QR6

First Sample Receipt Date

01/09/2008

Last Sample Receipt Date

01/09/2008

**Note:** There are a maximum of 20 field samples [excluding Performance Evaluation (PE) samples in an SDG. Attach the TR/COC Records to this form in alphanumeric order (the order listed above on this form).

Signature

Date 1/11/2008



Contract Laboratory Program

**RECEIVED**  
**JAN 30 2008**  
**HAZ. WASTE SUPPORT SEC**

### Sample Delivery Group (SDG)

#### Cover Sheet

SDG Number B4QR2

Laboratory Name	<u>Mitkem Laboratories</u>	Lab Code	<u>MITKEM</u>
Contract No.	<u>EP-W-05-030</u>	Case No.	<u>37088</u>
Analysis Price	<u>\$ 0.00</u>	SDG Turnaround	<u>21 days</u>

EPA Sample Numbers in SDG (Listed in Numerical Order)

01) B4QR2	08) B4QS1	15) B4QS8	
02) B4QR2MS	09) B4QS2	16) B4QS9	
03) B4QR2MSD	10) B4QS3	17) B4QT0	
04) B4QR7	11) B4QS4		
05) B4QR8	12) B4QS5		
06) B4QR9	13) B4QS6		
07) B4QS0	14) B4QS7		

First Sample in SDG

B4QR2

Last Sample in SDG

B4QT0

First Sample Receipt Date

01/09/2008

Last Sample Receipt Date

01/09/2008

**Note:** There are a maximum of 20 field samples [excluding Performance Evaluation (PE) samples in an SDG. Attach the TR/COC Records to this form in alphanumeric order (the order listed above on this form).

Signature

Date 1/16/2008



**Agnes Ng**

---

**From:** "Von Moll, Kristin" <kvonmoll@fedcsc.com>  
**To:** "Agnes Ng" <agnes\_ng@mitkem.com>; "Shirley Ng" <sng@mitkem.com>  
**Sent:** Tuesday, January 15, 2008 9:34 AM  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | SDG B4QR2 | Issue Insufficient/inappropriate designation of laboratory QC | FINAL

Hi Agnes,

I sent the following resolution for this issue last week to the Region but I forgot to include you.

I apologize for the delay. Please let me know if you have any questions.  
 Thanks,

Kristin Von Moll  
 Environmental Coordinator  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)  
 Computer Sciences Corporation  
 1-703-818-4235

---

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---

Hi Kristin,

I am still waiting for the resolution.

Thanks,  
 Agnes

---

**From:** Von Moll, Kristin  
**Sent:** Thursday, January 10, 2008 8:59 AM  
**To:** Adly Michael; Jennifer Ferranda  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | SDG B4QR2 | Issue Insufficient/inappropriate designation of laboratory QC | FINAL

Agnes,

\*\*\*Summary Start\*\*\*

Issue: Samples B4QR2 and B4QS4 are both designated as samples for laboratory QC. Both of these samples are in the same SDG (B4GR2). The laboratory would like to select sample B4QR2 for laboratory QC.

Resolution: In accordance with previous direction from Region 2, the laboratory will select one of the designated samples for laboratory QC. The laboratory will note the issue in the SDG Narrative, notify the SMO coordinator of the sample selected for QC, and proceed with the analysis of the samples.

SMO will note that sample B4QR2 was selected for laboratory QC.

\*\*\*Summary End\*\*\*

Please let me know if you have any other questions.  
 Thanks,

Kristin Von Moll  
 Environmental Coordinator  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)  
 Computer Sciences Corporation  
 1-703-818-4235

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---

**From:** Agnes Ng [mailto:agnes\_ng@mitkem.com]  
**Sent:** Wednesday, January 09, 2008 6:59 PM  
**To:** Von Moll, Kristin  
**Subject:** Case 37088 SDG B4QR2

Hi Kristin,

Samples B4QR2 and B4QS4 are both designated as samples for laboratory QC. Both of these samples are in this SDG. Are we to perform lab QC on both samples? If not, we will perform lab QC on sample B4QR2.

Thanks,  
Agnes Ng  
CLP Project Manager  
(P) 401-732-3400 x316  
(F) 401-732-3499

\*\*\*\*\*

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**Agnes Ng**

---

**From:** "Von Moll, Kristin" <kvonmoll@fedcsc.com>  
**To:** "Agnes Ng" <agnes\_ng@mitkem.com>; "Shirley Ng" <sng@mitkem.com>  
**Cc:** "Rudolph, Elizabeth" <erudolph@fedcsc.com>; "Adly Michael" <Michael.Adly@epamail.epa.gov>;  
 "Jennifer Ferranda" <feranda.jennifer@epa.gov>  
**Sent:** Monday, December 31, 2007 1:27 PM  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | Issue Non-sampler issues | FINAL

Agnes,

\*\*\*Summary Start\*\*\*

Issue: Samples tags were not received with the samples.

Resolution: In accordance with previous direction from Region 2, the laboratory will note the issue in the SDG Narrative, and proceed with the analysis of the samples. Region 2 does not require sample tags.

\*\*\*Summary End\*\*\*

Please let me know if you have any other questions.

Thanks,

Kristin Von Moll  
 CSC  
 Environmental Coordinator  
 (703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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**From:** Rudolph, Elizabeth  
**Sent:** Monday, December 31, 2007 1:14 PM  
**To:** Von Moll, Kristin  
**Subject:** FW: Case 37073

---

**From:** Agnes Ng [mailto:agnes\_ng@mitkem.com]  
**Sent:** Monday, December 31, 2007 12:08 PM  
**To:** Rudolph, Elizabeth  
**Subject:** Case 37073

Hi Beth,

Tags were not received with the samples.

Thanks,  
 Agnes Ng  
 CLP Project Manager  
 (P) 401-732-3400 x316  
 (F) 401-732-3499

\*\*\*\*\*

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1/28/2008  
 0584

**Agnes Ng**

---

**From:** "Von Moll, Kristin" <kvonmoll@fedcsc.com>  
**To:** "Agnes Ng" <agnes\_ng@mitkem.com>; "Shirley Ng" <sng@mitkem.com>  
**Cc:** "Rudolph, Elizabeth" <erudolph@fedcsc.com>; "Adly Michael" <Michael.Adly@epamail.epa.gov>;  
 "Jennifer Ferranda" <feranda.jennifer@epa.gov>  
**Sent:** Tuesday, January 08, 2008 2:33 PM  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | Issue Laboratory problems | FINAL

Agnes,

\*\*\*Summary Start\*\*\*

Issue: The samples are pretty loaded with Aoclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. The laboratory would like to know if GC/MS confirmation is required for all of the samples.

Resolution: Per Region 2, GC/MS confirmation is not required. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

\*\*\*Summary End\*\*\*

Please let me know if you have any other questions.

Thanks,

Kristin Von Moll  
 CSC  
 Environmental Coordinator  
 (703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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 -----

-----Original Message-----

From: [Michael.Adly@epamail.epa.gov](mailto:Michael.Adly@epamail.epa.gov) [mailto:[Michael.Adly@epamail.epa.gov](mailto:Michael.Adly@epamail.epa.gov)]

Sent: Tuesday, January 08, 2008 2:20 PM

To: Von Moll, Kristin

Cc: Rudolph, Elizabeth; [feranda.jennifer@epa.gov](mailto:feranda.jennifer@epa.gov)

Subject: Re: NEW ISSUE #1 | Case 37088 | Lab MITKEM | Issue Laboratory problems

Kristin,

Please advise the lab that GC/MS confirmation is not required.

Thanks.

Adly A. Michael  
Region 2 - HWSB - HWSS  
Phone: (732) 906-6161  
Fax: (732) 321-6622

"Von Moll,  
Kristin"

<[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)>

To

Adly [Michael/R2/USEPA/US@EPA](mailto:Michael/R2/USEPA/US@EPA),  
Jennifer [Feranda/R2/USEPA/US@EPA](mailto:Feranda/R2/USEPA/US@EPA)

01/08/2008 12:20  
PM

cc

"Rudolph, Elizabeth"  
<[erudolph@fedcsc.com](mailto:erudolph@fedcsc.com)>

Subject

NEW ISSUE #1 | Case 37088 | Lab  
MITKEM | Issue Laboratory  
problems

Hi Adly,

MITKEM is reporting the following issue regarding Case 37088.

Issue: The samples are pretty loaded with Aoclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. The laboratory would like to know if GC/MS confirmation is required for all of the samples.

Please advise on how the laboratory should proceed.  
Thanks,

Kristin Von Moll  
CSC  
Environmental Coordinator  
(703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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0538

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From: Agnes Ng [mailto:agnes\_ng@mitkem.com]  
Sent: Tuesday, January 08, 2008 12:00 PM  
To: Von Moll, Kristin  
Subject: Case 37088

Hi Kristin,

I am writing in regards to GC/MS confirmation. The samples are pretty loaded with Aroclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. Do we have to do GC/MS confirmation for all these samples?

Thanks,  
Agnes Ng  
CLP Project Manager  
(P) 401-732-3400 x316  
(F) 401-732-3499

\*\*\*\*\*

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**Agnes Ng**

**From:** "Von Moll, Kristin" <kvonmoll@fedcsc.com>  
**To:** "Agnes Ng" <agnes\_ng@mitkem.com>; "Shirley Ng" <sng@mitkem.com>  
**Cc:** "Rudolph, Elizabeth" <erudolph@fedcsc.com>; "Adly Michael" <Michael.Adly@epamail.epa.gov>;  
 "Jennifer Ferranda" <feranda.jennifer@epa.gov>  
**Sent:** Monday, December 31, 2007 1:27 PM  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | Issue Non-sampler issues | FINAL

Agnes,

\*\*\*Summary Start\*\*\*

Issue: Samples tags were not received with the samples.

Resolution: In accordance with previous direction from Region 2, the laboratory will note the issue in the SDG Narrative, and proceed with the analysis of the samples. Region 2 does not require sample tags.

\*\*\*Summary End\*\*\*

Please let me know if you have any other questions.

Thanks,

Kristin Von Moll  
 CSC  
 Environmental Coordinator  
 (703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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 -----

**From:** Rudolph, Elizabeth  
**Sent:** Monday, December 31, 2007 1:14 PM  
**To:** Von Moll, Kristin  
**Subject:** FW: Case 37073

**From:** Agnes Ng [mailto:agnes\_ng@mitkem.com]  
**Sent:** Monday, December 31, 2007 12:08 PM  
**To:** Rudolph, Elizabeth  
**Subject:** Case 37073

Hi Beth,

Tags were not received with the samples.

Thanks,  
 Agnes Ng  
 CLP Project Manager  
 (P) 401-732-3400 x316  
 (F) 401-732-3499

\*\*\*\*\*

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**Agnes Ng**

---

**From:** "Von Moll, Kristin" <kvonmoll@fedcsc.com>  
**To:** "Agnes Ng" <agnes\_ng@mitkem.com>; "Shirley Ng" <sng@mitkem.com>  
**Cc:** "Rudolph, Elizabeth" <erudolph@fedcsc.com>; "Adly Michael" <Michael.Adly@epamail.epa.gov>;  
 "Jennifer Ferranda" <feranda.jennifer@epa.gov>  
**Sent:** Tuesday, January 08, 2008 2:33 PM  
**Subject:** Region 02 | Case 37088 | Lab MITKEM | Issue Laboratory problems | FINAL

Agnes,

\*\*\*Summary Start\*\*\*

Issue: The samples are pretty loaded with Aoclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. The laboratory would like to know if GC/MS confirmation is required for all of the samples.

Resolution: Per Region 2, GC/MS confirmation is not required. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

\*\*\*Summary End\*\*\*

Please let me know if you have any other questions.

Thanks,

Kristin Von Moll  
 CSC  
 Environmental Coordinator  
 (703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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 -----

-----Original Message-----

From: [Michael.Adly@epamail.epa.gov](mailto:Michael.Adly@epamail.epa.gov) [mailto:Michael.Adly@epamail.epa.gov]

Sent: Tuesday, January 08, 2008 2:20 PM  
 To: Von Moll, Kristin  
 Cc: Rudolph, Elizabeth; [feranda.jennifer@epa.gov](mailto:feranda.jennifer@epa.gov)  
 Subject: Re: NEW ISSUE #1 | Case 37088 | Lab MITKEM | Issue Laboratory problems

Kristin,



Please advise the lab that GC/MS confirmation is not required.

Thanks.

Adly A. Michael  
Region 2 - HWSB - HWSS  
Phone: (732) 906-6161  
Fax: (732) 321-6622

"Von Moll,  
Kristin"  
<[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)>  
01/08/2008 12:20 PM  
To  
Adly Michael/R2/USEPA/US@EPA,  
Jennifer Feranda/R2/USEPA/US@EPA  
cc  
"Rudolph, Elizabeth"  
<[erudolph@fedcsc.com](mailto:erudolph@fedcsc.com)>  
Subject  
NEW ISSUE #1 | Case 37088 | Lab  
MITKEM | Issue Laboratory  
problems

Hi Adly,

MITKEM is reporting the following issue regarding Case 37088.

Issue: The samples are pretty loaded with Aoclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. The laboratory would like to know if GC/MS confirmation is required for all of the samples.

Please advise on how the laboratory should proceed.  
Thanks,

Kristin Von Moll  
CSC  
Environmental Coordinator  
(703) 818-4235  
[kvonmoll@fedcsc.com](mailto:kvonmoll@fedcsc.com)

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1/28/2008  
5:18 PM

written agreement or government initiative expressly permitting the use of e-mail for such purpose.

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From: Agnes Ng [mailto:agnes\_ng@mitkem.com]  
Sent: Tuesday, January 08, 2008 12:00 PM  
To: Von Moll, Kristin  
Subject: Case 37088

Hi Kristin,

I am writing in regards to GC/MS confirmation. The samples are pretty loaded with Aroclor(s). Per the SOW, GC/MS confirmation is required for Aroclor concentrations above 3300ug/Kg. Do we have to do GC/MS confirmation for all these samples?

Thanks,  
Agnes Ng  
CLP Project Manager  
(P) 401-732-3400 x316  
(F) 401-732-3499

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